GUITAR PRE-AMPLIFIER

DG100-212

SERVICE MANUAL



■ **CONTENTS**

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IMPORTANT NOTICE

This manual has been provided for the use of authorized Yamaha Retailers and their service personnel. It has been assumed that basic service procedures inherent to the industry, and more specifically Yamaha Products, are already known and understood by the users, and have therefore not been restated.

WARNING: Failure to follow appropriate service and safety procedures when servicing this product may result in personal injury, destruction of expensive components and failure of the product to perform as specified. For these reasons, we advise all Yamaha product owners that all service required should be performed by an authorized Yamaha Retailer or the appointed service representative.

IMPORTANT: This presentation or sale of this manual to any individual or firm does not constitute authorization, certification, recognition of any applicable technical capabilities, or establish a principal-agent relationship of any form.

The data provided is belived to be accurate and applicable to the unit(s) indicated on the cover. The research engineering, and service departments of Yamaha are continually striving to improve Yamaha products. Modifications are, therefore, inevitable and changes in specification are subject to change without notice or obligation to retrofit. Should any discrepancy appear to exist, please contact the distributor's Service Division.

WARNING: Static discharges can destroy expensive components. Discharge any static electricity you body may have accumulated by grounding yourself to the ground buss in the unit (heavy gauge black wires connect to this buss.)

IMPORTANT: Turn the unit OFF during disassembly and parts replacement. Recheck all work before you apply power to the unit.

LITHIUM BATTERY HANDLING

This product uses a lithium battery for memory back-up.

WARNING: Lithium batteries are dangerous because they can be exploded by improper handling. Observe the following precautions when handling or replacing lithium batteries.

- Leave lithium battery replacement to qualified service personnel.
- Always replace with batteries of the same type.
- When installing on the PC board by soldering, solder using the connection terminals provided on the battery cells.
- Never solder directly to the cells. Perform the soldering as quickly as possible.
- Never reverse the battery polarities when installing.
- Do not short the batteries.
- Do not attempt to recharge these batteries.
- Do not disassemble the batteries.
- Never heat batteries or throw them into fire.

ADVARSEL!

Lithiumbatteri-Eksplosionsfare ved fejlagtig håndtering. Udskiftning må kun ske med batteri af samme fabrikat og type. Levér det brugte batteri tilbage til leverandøren.

VARNING

Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens instruktion.

VAROITUS

Paristo voi räjähtää, jos se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin.
Hävitä käytetty paristo valmistajan ohjeiden mukaisesti.

The following information complies with Dutch Official Gazette 1995. 45; ESSENTIALS OF ORDER ON THE COLLECTION OF BATTERIES.

•Please refer to the diassembly procedure for the removal of Back-up Battery.
•Leest u voor het verwijderen van de backup batterij deze beschrijving.

WARNING: CHEMICAL CONTENT NOTICE!

The solder used in the production of this product contains LEAD. In addition, other electrical/electronic and/or plastic (where applicable) components may also contain traces of chemicals found by the California Health and Welfare Agency (and possibly other entities) to cause cancer and/or birth defects or other reproductive harm.

DO NOT PLACE SOLDER, ELECTRICAL/ELECTRONIC OR PLASTIC COMPONENTS IN YOUR MOUTH FOR ANY REASON WHAT SO EVER!

Avoid prolonged, unprotected contact between solder and your skin! When soldering, do not inhale solder fumes or expose eyes to solder/flux vapor!

If you come in contact with solder or components located inside the enclosure of this product, wash your hands before handling food.

■ WARNING

Components having special characteristics are marked ⚠ and must be replaced with parts having specification equal to those originally installed.

SPECIFICATIONS

Digital Section
Complete Digital Signal Processing
Internal 8 Channel Preset
Digital Reverb (SPRING, HALL, PLATE)
Digital Tape Echo
Speaker Simulator (LINE OUT)

Analog Section
100W Solid State Power Amp
30 cm Speaker (Celestion Vintage 30) X 2

MIDI Function
Receive : Program change, Control Change (No. 7, 91, 94), Bulk In
Transmit : Bulk Out, Merge Out

Controller/Switch
Front Panel : TRIM, OUTPUT, GAIN, MASTER, TREBLE, HIGH MID, LOW MID, BASS (TIME), PRESENCE (FEED BACK), REVERB (LEVEL)
Rear Panel : LINE OUT volume, EFFECT BLEND
Switch : AMP SELECT (LEAD1, LEAD2, DRIVE1, DRIVE2, CRUNCH1, CRUNCH2, CLEAN1, CLEAN2), REVERB, MODE, ⇧, ⇩, STORE, RECALL

Display
AMP SELECT display LED X 8
MODE display LED X 3
REVERB type display X 3
7 segment LED X 2 digits

Indicator
Trim Level Display LED (Green)
Trim Clip Display LED (Red)

Connection Jacks
INPUT HIGH/LOW, SPEAKER, EFFECT SEND/RETURN: Standard Phone Mono Jack
LINE OUT: Cannon Jack
MIDI IN, MIDI OUT: 5 pin DIN

A/D Converter 20 bit

D/A Converter 20 bit

Sampling Frequency 48 kHz

Memory Number 128

Input Level/Impedance
INPUT HIGH: –30dBm (THRU)/1MΩ
INPUT LOW: –20dBm (THRU)/1MΩ
EFFECT RETURN: 0dBm/120kΩ

Output Level/Impedance
SPEAKER: 100W RMS/4Ω
LINE OUT: +4dBm/600Ω
EFFECT SEND: 0dBm/120kΩ

Power Requirements
U.S. and Canadian models : 120V, 60Hz
General model : 230V, 50Hz

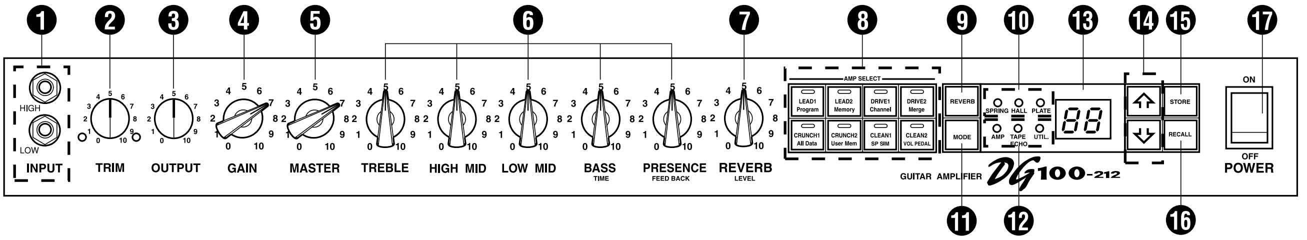
Power Consumption 100W

Dimensions (w/Caster) 712 (W) X 574 (H) X 284 (D) mm
28” (W) X 22.6” (H) X 11.2” (D)

Weight 33.5 kg (73 lbs 13 oz)

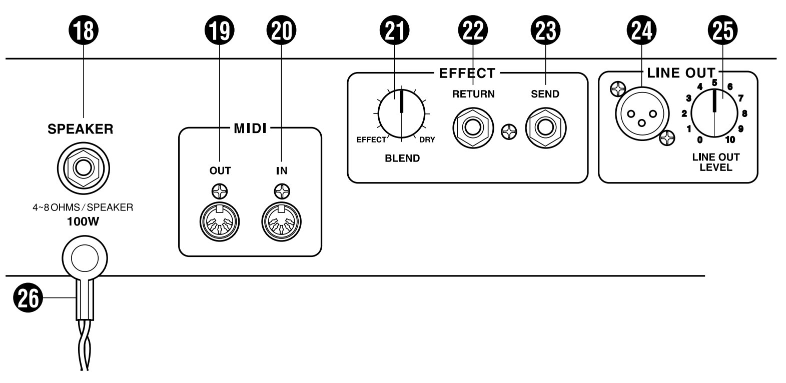
PANEL LAYOUT

• Front panel



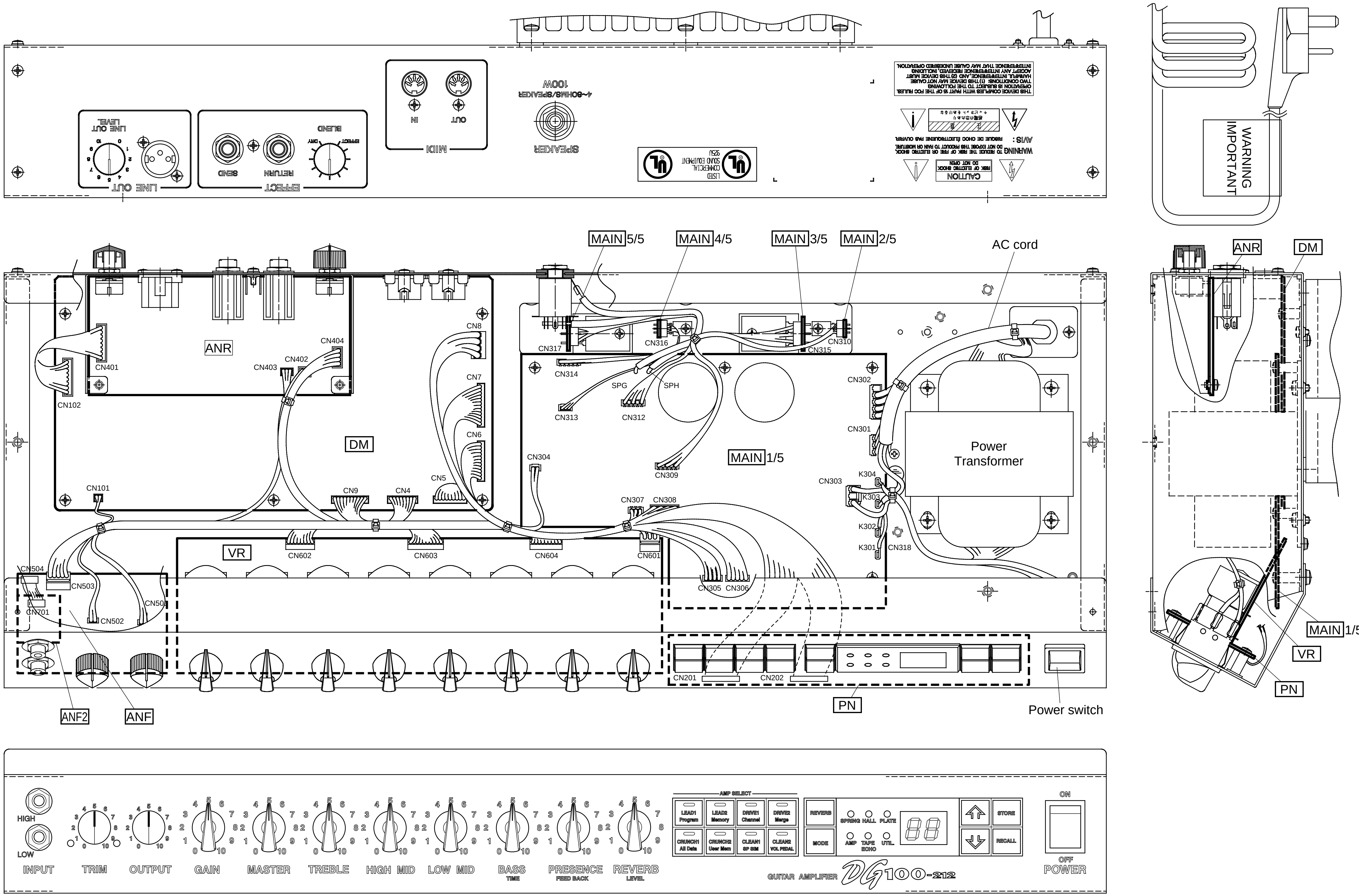
1 Input Jack (INPUT HIGH, LOW)
2 Trim Control (TRIM)
3 Output Level Control (OUTPUT)
4 Gain Volume (GAIN)
5 Master Volume (MASTER)
6 Tone Controls
(TREBLE, HIGH MID, LOW MID, BASS, PRESENCE)
7 Reverb Volume (REVERB)
8 Amp Select Button/Amp Select Display
(LEAD 1, 2/DRIVE 1, 2/CRUNCH 1, 2/CLEAN 1, 2)
9 Reverb Type Select Button (REVERB)
10 Reverb Type Display Lamp (SPRING, HALL, PLATE)
11 Mode Select Button (MODE)
12 Mode Display Lamp (AMP/TAPE ECHO/UTIL.)
13 Display
14 ⇧/⇩ Buttons
15 Store Button (STORE)
16 Recall Button (RECALL)
17 Power Switch (POWER)

• Rear panel

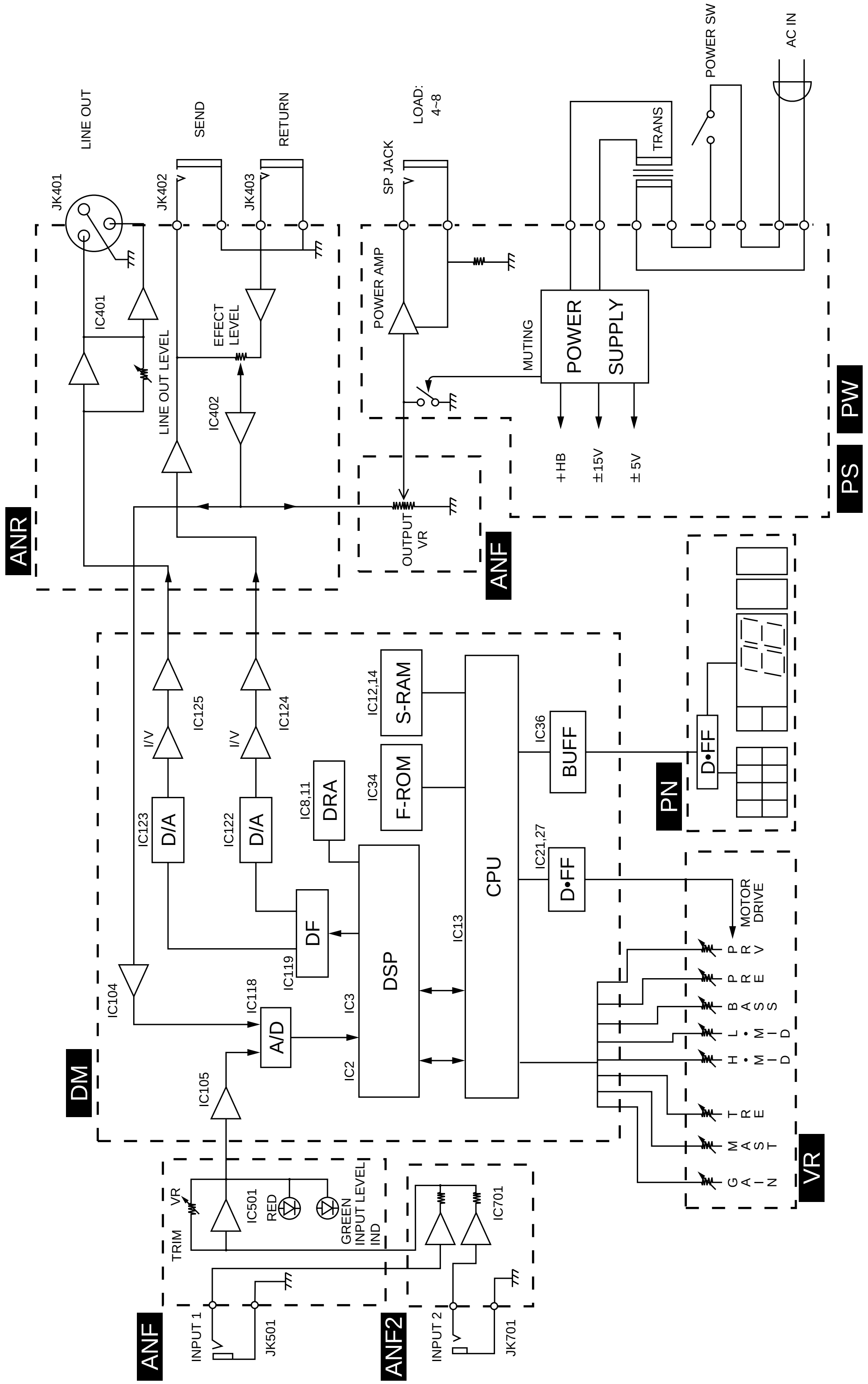


18 Speaker Jack (SPEAKER)
19 MIDI OUT Jack
20 MIDI IN Jack
21 Effect Blend Control (EFFECT BLEND)
22 Effect Return Jack (EFFECT RETURN)
23 Effect Send Jack (EFFECT SEND)
24 Line Out Jack (LINE OUT)
25 Line Out Level Control (LINE OUT LEVEL)
26 Speaker Plug

CIRCUIT BOARD LAYOUT



■ BLOCK DIAGRAM



■ DISASSEMBLY PROCEDURE

1. Pre-Main Unit

1-1 Remove the four (4) screws marked [70A]. The back board (U) can then be removed. (Fig. 1)

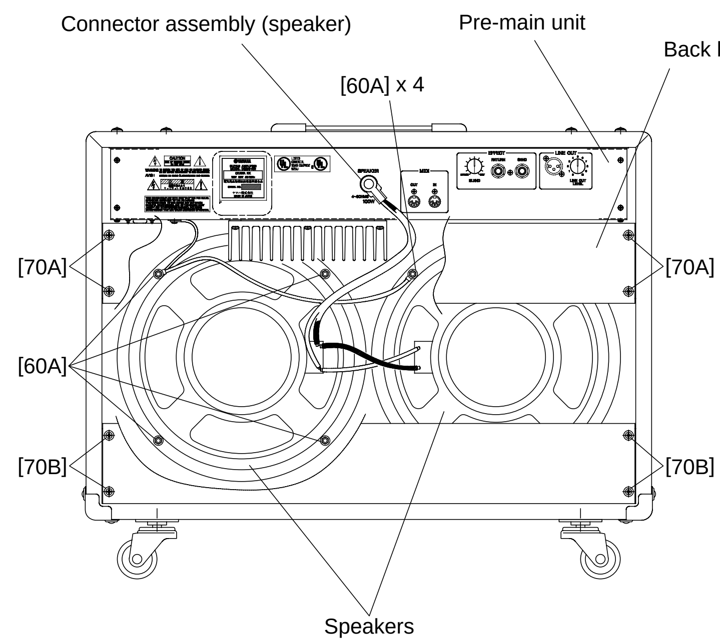
1-2 Remove the plug of the connector assembly (speaker) located on the rear panel and the six (6) screws marked [30A]. The pre-main unit can then be removed by sliding it backward.(Fig. 1, Fig. 2)

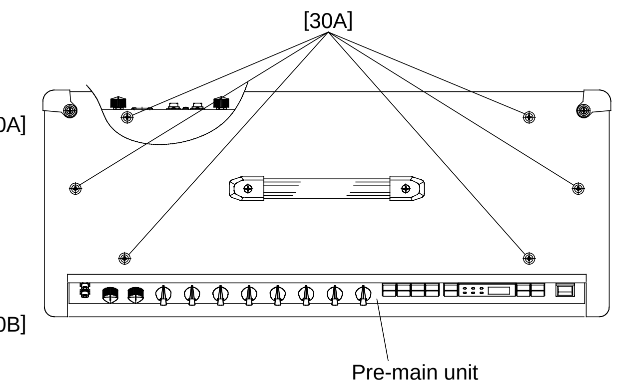
2. Speakers

2-1 Remove the four (4) screws marked [70A]. The back board (U) can then be removed. (Fig. 1)

2-2 Remove the four (4) screws marked [70B]. The back board (L) can then be removed. (Fig. 1)

2-3 Remove the plug of the connector assembly (speaker) located on the rear panel and the eight (8) hexagonal nuts with flanges marked [60A]. The right and left speakers can then be removed. (Fig. 1)





[60]: Hexagonal Nut 5.0 x 35 MFC2BL (EX000990)

[70]: Oval Head Tapping Screw 4.0 x 30 MFC2BL (EN240090)

[30A]: Oval Head Screw 5.0 x 35 MFC2BL (VP104600)

(Fig. 1)

(Fig. 2)

3. Front Panel Assembly

3-1 Remove the pre-main unit. (See Procedure 1)

3-2 Remove the five (5) screws marked [30B]. The front panel assembly can then be removed. (Fig. 3)

4. ANR Circuit Board

4-1 Remove the pre-main unit. (See Procedure 1)

4-2 Remove the screw marked [50], the two (2) screws marked [170], the two (2) knobs marked [60] and the four (4) hexagonal nuts marked [A]. The ANR circuit board assembly can then be removed. (Fig. 3)

4-3 Remove the two (2) screws marked [40d]. The ANR circuit board can then be removed from the ANR circuit board assembly. (Fig. 3)

5. DM Circuit Board

5-1 Remove the pre-main unit. (See Procedure 1)

5-2 Remove the ANR circuit board. (See Procedure 4)

5-3 Remove the two (2) screws marked [40] and the six (6) screws marked [30C]. The DM circuit board can then be removed. (Fig. 3)

6. Main (1/5-2/5) Circuit Board

6-1 Remove the pre-main unit. (See Procedure 1)

6-2 Each circuit board can then be removed in its manner as below.

Main 1/5 Circuit Board
Remove the six (6) screws marked [60B]. The main 1/5 circuit board can then removed. (Fig. 3)

Main 2/5 Circuit Board
Remove the screw marked [150A]. The main 2/5 circuit board can then removed. (Fig. 3)

Main 3/5 Circuit Board
Remove the screw marked [150B]. The main 3/5 circuit board can then removed. (Fig. 3)

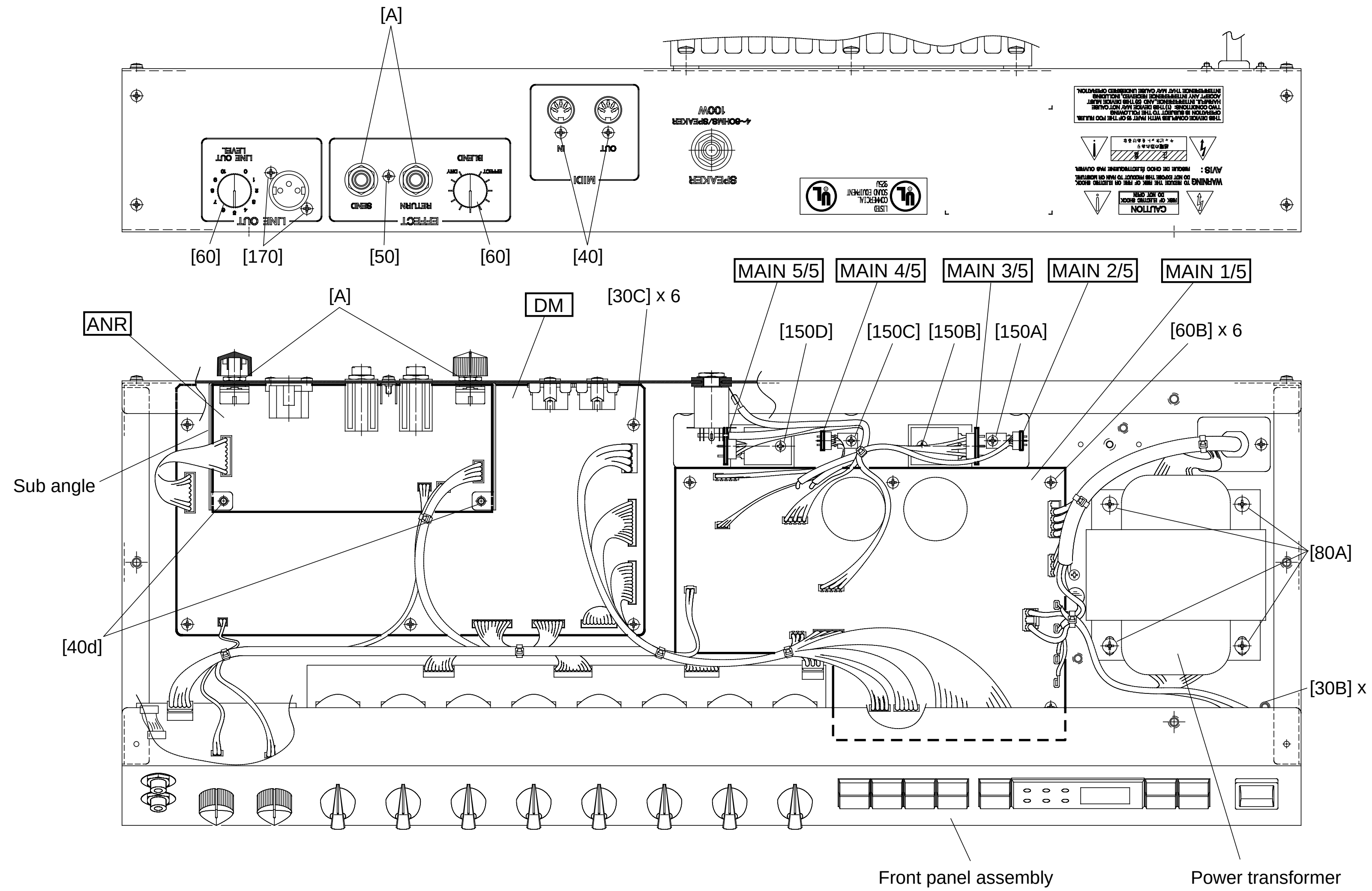
Main 4/5 Circuit Board
Remove the screw marked [150C]. The main 4/5 circuit board can then removed. (Fig. 3)

Main 5/5 Circuit Board
Remove the screw marked [150D]. The main 5/5 circuit board can then removed. (Fig. 3)

7. Power Transformer

7-1 Remove the pre-main unit. (See Procedure 1)

7-2 Remove the four (4) screws marked [80A]. The Transformer can then be removed. (Fig. 3)



[30B]: Bind Head Tapping Screw-A4.0 x 8 MFZN2BL (VP156800)
[30C]: Bind Head Tapping Screw-B 3.0 x 6 MFZN2BL (EP600230)
[40]: Bind Head Tapping Screw-B 3.0 x 8 MFZN2BL (EP600190)
[40d]: Pan Head Screw SP3.0 x 8 MFZN2Y (EK400500)
[50]: Bind Head Screw A3.0 x 8 MFZN2BL (VP156700)
[60B]: Bind Head Tapping Screw-B 3.0 x 6 MFZN2BL (EP600230)
[80A]: Bind Head Screw A4.0 x 8 MFZN2BL (VP156800)
[150]: Pan Head Screw SP3.0 x 12 MFZN2Y (EL200070)
[170]: Bind Head Tapping Screw-B 3.0 x 8 MFZN2BL (EP600190)

(Fig. 3)

8. PN Circuit Board

8-1 Remove the pre-main unit. (See Procedure 1)
8-2 Remove the front panel assembly. (See Procedure 3)
8-3 Remove the ten (10) screws marked [80B]. The PN circuit board assembly can then be removed. (Fig. 4)
8-4 Remove the seven (7) top cap assemblies from the PN circuit board assembly. (Fig. 4)

9. ANF Circuit Board

9-1 Remove the pre-main unit. (See Procedure 1)
9-2 Remove the front panel assembly. (See Procedure 3)
9-3 Remove the two (2) screws marked [100], the two (2) hexagonal nuts marked [B] and the hexagonal nut marked [110A]. The ANF circuit board can then be removed. (Fig 4)

10. ANF2 Circuit Board

10-1 Remove the pre-main unit. (See Procedure 1)
10-2 Remove the hexagonal nut marked [110B]. The ANF2 circuit board can then be removed. (Fig. 4)

11. VR Circuit Board

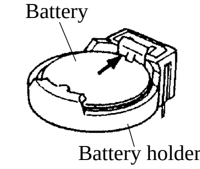
11-1 Remove the pre-main unit. (See Procedure 1)
11-2 Remove the front panel assembly. (See Procedure 3)
11-3 Remove the eight (8) knobs marked [90] and the four (4) screws marked [30D]. The VR circuit board assembly can then be removed. (Fig. 4)
11-4 Remove the eight (8) hexagonal nuts marked [C]. The VR circuit board can then be removed from the VR circuit board assembly. (Fig. 5)

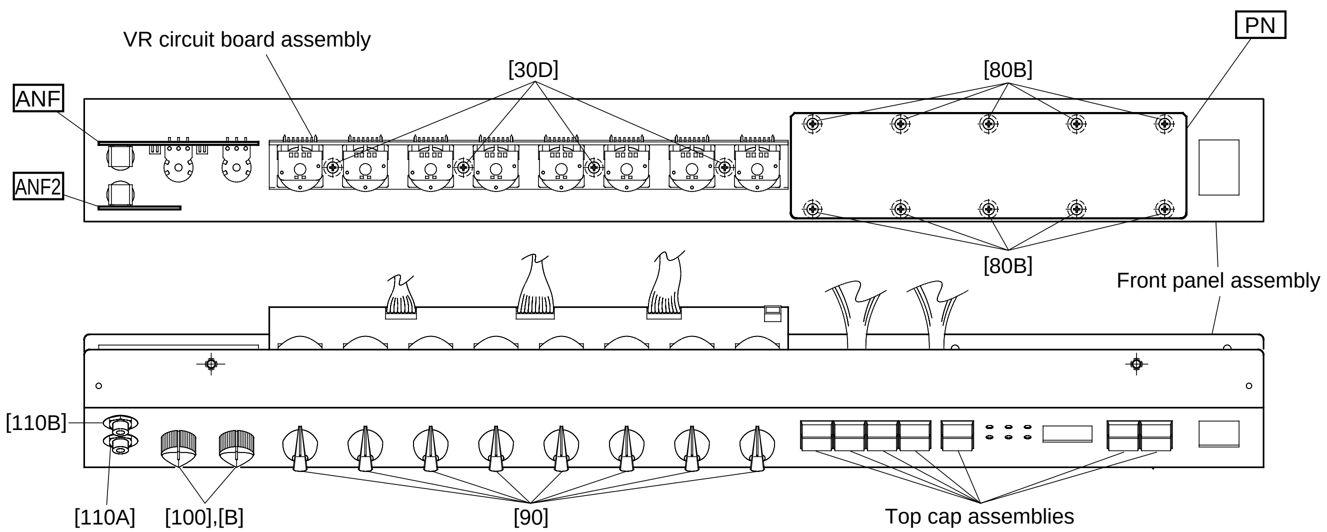
12. Replacement Of The Lithium Battery

12-1 Remove the pre-main unit. (See Procedure 1)
12-2 The lithium battery marked [D], on the DM circuit board, can be replaced. (Fig. 6)

Battery VS246400
VS246300(Battery holder for VS246400)

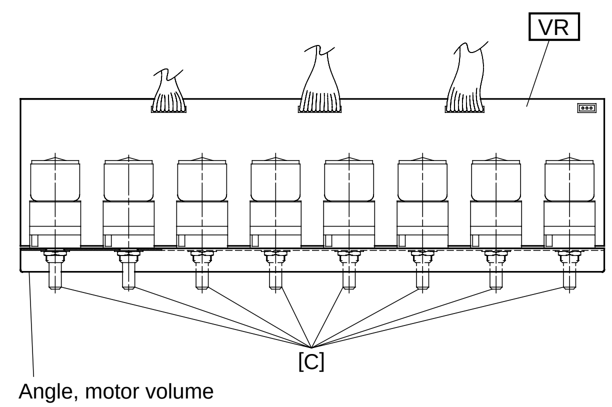
- Notice for back-up battery removal
  Push against the holder hook, then the battery will pop up.
- Druk tegen de houder, de batterij springt dan naar voren.



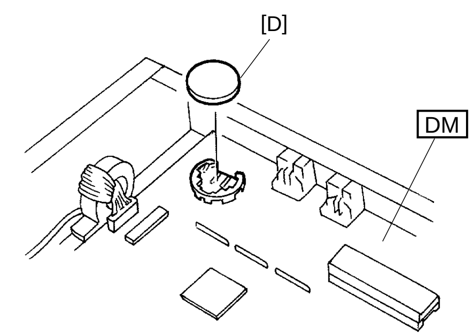


[30B]: Bind Head Tapping Screw-B 3.0 x 6 MFZN2BL (EP600230)
[80B]: Bind Head Tapping Screw-B 3.0 x 6 MFZN2BL (EP600230)
[110]: Hexagonal Nut 9.0 x 12 x 2 MFNI33 (LX200060)

(Fig. 4)



(Fig. 5)



[140b]: Bind Head Tapping Screw-B 3.0 x 6 MFZN2BL (EP600230)
[D]: Lithium Battery CR2032

(Fig. 6)

■ LSI PIN DESCRIPTION

● **HD6413002FP16** (XQ375A00) **CPU** <H8/3002>

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	PA6	O	Port A	51	A12	O	
2	PA7	O	Address bus	52	A13	O	
3	VCC		Power supply	53	A14	O	
4	PB0	I		54	A15	O	Address bus
5	PB1	I		55	A16	O	
6	PB2	I		56	A17	O	
7	PB3	I	Port B	57	A18	O	
8	PB4	I		58	A19	O	
9	PB5	I		59	VSS		Ground
10	PB6//DREQ0	I		60	P60//WAIT	I	
11	PB7//DREQ1	I		61	P61//BREQ	I	Port 6
12	/RESO	O	Reset	62	P62//BACK	I	
13	VSS		Ground	63	ø	O	øout
14	P90/TXD0	O	Transmit data (MIDI OUT)	64	/STBY	I	Stand-by mode signal
15	P91/TXD1	O	KSN-ACK	65	/RES	I	Reset
16	P92/RXD0	I	Receive data (MIDI IN)	66	NMI	I	Non-maskable interrupt
17	P93/RXD1	I	KSN-RX	67	VSS		Ground
18	P94/SCK0	O	Port 9	68	EXTAL	I	Clock
19	P95/SCK1	I	Port 9	69	XTAL	O	Clock
20	P40/D0	I/O		70	VCC		Power supply
21	P41/D1	I/O		71	/AS	O	Address strobe
22	P42/D2	I/O		72	/RD	O	Read strobe
23	P43/D3	I/O		73	/HWR	O	Write strobe (High)
24	VSS		(Ground)	74	/LWR	O	Write strobe (Low)
25	P44/D4	I/O		75	MD0	I	
26	P45/D5	I/O		76	MD1	I	Mode select
27	P46/D6	I/O		77	MD2	I	
28	P47/D7	I/O	Data bus	78	AVCC		Analog power supply
29	D8	I/O		79	VREF	I	Reference voltage
30	D9	I/O		80	P70/AN0	I	Analog data input (EQ)
31	D10	I/O		81	P71/AN1	I	Analog input (EQ)
32	D11	I/O		82	P72/AN2	I	Analog data input
33	D12	I/O		83	P73/AN3	I	Analog input (CS)
34	D13	I/O		84	P74/AN4	I	Analog data input (BEND)
35	D14	I/O		85	P75/AN5	I	Analog input (MOD)
36	D15	I/O		86	P76/AN6	I	Analog input (FC)
37	VCC		Power supply	87	P77/AN7	I	Analog input (BAT)
38	A0	O		88	AVSS		Analog ground
39	A1	O		89	P80	O	Port 8
40	A2	O		90	P81//CS3	O	
41	A3	O		91	P82//CS2	O	Chip select
42	A4	O		92	P83//CS1	O	
43	A5	O		93	P84//CS0	O	
44	A6	O	Address bus	94	VSS		Ground
45	A7	O		95	PA0	I	
46	VSS		(Ground)	96	PA1	I	
47	A8	O		97	PA2	I	Port A
48	A9	O		98	PA3	O	
49	A10	O		99	PA4	O	
50	A11	O		100	PA5	O	

• **YSS228D-F** (XQ962D00) DSP3 (Digital Signal Processor)

PIN NO.	NAME	I/O	FUNCTION	PIN NO.	NAME	I/O	FUNCTION
1	VSS		Ground	81	VSS	I/O	Ground
2	XI	I	System master clock input (60M or30MHz)	82	DB13	I/O	Parallel data bus
3	XO		System master clock input (60M or30MHz)	83	DB14	I/O	
4	VDD		Power supply	84	DB15	I/O	
5	/SYNCI	I	System synch. input	85	DB16	I/O	
6	/SYNCO	O	System synch. output	86	DB17	I/O	
7	CKI	I	System clock input (30MHz)	87	DB18	I/O	
8	CKO	O	System clock output (30MHz)	88	DB19	I/O	
9	CKSL	I	System master clock select (0:60M,1:30MHz)	89	DB20	I/O	
10	VSS		Ground	90	DB21	I/O	
11	MCKS	I	Master clock for serial I/O(128xFs)	91	DB22	I/O	
12	/SSYNC	I	Synch. signal for serial I/O	92	DB23	I/O	
13	/IC	I	Initial clear	93	DB24	I/O	
14	/TEST	I	Test mode setting	94	DB25	I/O	
15	BTYP	I	CPU data bus 8/16 bit select(0:8,1:16)	95	DB26	I/O	
16	/IRQ	O	Interrupt request	96	DB27	I/O	
17	TRIG	I/O	Trigger signal	97	DB28	I/O	
18	VDD		Power supply	98	DB29	I/O	
19	VSS		Ground	99	DB30	I/O	
20	/CS	I	Chip select	100	DB31	I/O	
21	/DS	I	Data strobe	101	TIMO/DBOE	I/O	Timing signal/Parallel data bus control
22	R/W	I	Read/Write select	102	VSS		Ground
23	CA7	I	CPU address bus	103	VDD		Power supply
24	CA6	I		104	DA00	I/O	External memory data bus
25	CA5	I		105	DA01	I/O	
26	CA4	I		106	DA02	I/O	
27	CA3	I		107	DA03	I/O	
28	CA2	I		108	DA04	I/O	
29	CA1	I		109	DA05	I/O	
30	CA0/CD15	I/O	CPU address/data bus	110	DA06	I/O	
31	CD14	I/O	CPU data bus	111	DA07	I/O	
32	CD13	I/O		112	DA08	I/O	
33	CD12	I/O		113	DA09	I/O	
34	CD11	I/O		114	DA10	I/O	
35	CD10	I/O		115	DA11	I/O	
36	CD09	I/O		116	DA12	I/O	
37	CD08	I/O		117	DA13	I/O	
38	CD07	I/O		118	DA14	I/O	
39	CD06	I/O		119	DA15	I/O	
40	VSS		Ground	120	VSS		Ground
41	VDD		Power supply	121	VDD		Power supply
42	CD05	I/O	CPU data bus	122	DA16	I/O	External memory data bus
43	CD04	I/O		123	DA17	I/O	
44	CD03	I/O		124	DA18	I/O	
45	CD02	I/O		125	DA19	I/O	
46	CD01	I/O		126	DA20	I/O	
47	CD00	I/O		127	DA21	I/O	
48	/DTACK	O	DTACK signal output	128	DA22	I/O	
49	SI0	I	Serial data input	129	DA23	I/O	
50	SI1	I		130	DA24	I/O	
51	SI2	I		131	DA25	I/O	
52	SI3	I		132	DA26	I/O	
53	SI4	I		133	DA27	I/O	
54	SI5	I		134	DA28	I/O	
55	SI6	I		135	DA29	I/O	
56	SI7	I		136	DA30	I/O	
57	VSS		Ground	137	DA31	I/O	
58	VDD		Power supply	138	VDD		Power supply
59	SO0	O	Serial data output	139	VSS		Ground
60	SO1	O		140	A00	O	External memory address bus
61	SO2	O		141	A01	O	
62	SO3	O		142	A02	O	
63	SO4	O		143	A03	O	
64	SO5	O		144	A04	O	
65	SO6	O		145	A05	O	
66	SO7	O		146	A06	O	
67	DB00	I/O	Parallel data bus	147	A07	O	
68	DB01	I/O		148	A08	O	
69	DB02	I/O		149	A09	O	
70	DB03	I/O		150	A10	O	
71	DB04	I/O		151	A11	O	
72	DB05	I/O		152	A12	O	
73	DB06	I/O		153	A13	O	
74	DB07	I/O		154	A14	O	
75	DB08	I/O		155	A15/RAS	O	External memory address bus/Row address strobe
76	DB09	I/O		156	A16/CAS	O	External memory address bus/Column address strobe
77	DB10	I/O		157	A17/CE	O	External memory address bus/Chip enable
78	DB11	I/O		158	/WE	O	External memory write enable
79	DB12	I/O		159	/OE	O	External memory output enable
80	VDD		Power supply	160	VDD		Power supply

• **YSF210-M** (XK280A00) Digital Filter

PIN NO.	NAME	I/O	FUNCTION
1	XO	O	System clock
2	XI	I	System clock
3	VSS2		Ground
4	BCI	I	Bit clock
5	SDSY	I	L/R select and input timing
6	IBIT1	I	Input bit selection
7	IBIT2	I	Input bit selection
8	IBIT3	I	Input bit selection
9	MUTE	I	Mute
10	NC	-	No connection
11	SDI	I	Input data
12	VDD2		Power supply
13	OBIT1	I	Output bit selection
14	OBIT2	I	Output bit selection
15	NC	-	No connection
16	ASY	I	Synchronous/Asynchronous system clock section
17	VSS1		Ground
18	BCO	O	Bit clock of DLO, DRO
19	WCO	O	Word clock of DLO, DRO
20	SHL	O	Deglich signal of L/R channel
21	DRO	O	Output data of R channel
22	NC	-	No connection
23	DLO	O	Output data of L channel
24	VDD1		Power supply

Input bit selection:

	22 bit	20 bit	18 bit	16 bit	AV DSP	MEL
IBIT 1	H	L	H	L	H	H
IBIT 2	H	H	L	L	H	H
IBIT 3	H	H	H	H	L	L

Output bit selection:

	22 bit	20 bit	18 bit	no output
OBIT 1	H	L	H	L
OBIT 2	H	H	L	L

• **AK5390-VP** (XQ199A00) ADC (Analog.Digita Converter)

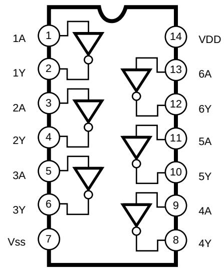
PIN NO.	NAME	I/O	FUNCTION
1	AGND		Analog ground
2	APD	I	
3	AINL+	I	Analog signal input (L channel -)
4	AINL-	I	Analog signal input (L channel +)
5	ACAL	I	Analog calibration
6	LGND		Analog logic ground
7	VL+		Analog logic power supply
8	NC		
9	DACL	O	Digital calibration
10	DPD	I	Digital power down
11	CMODE	I	Master clock select (L: CLK=256fs, H:CLK=384fs)
12	SMODE	I	Interface clock select (L: slave mode, H: master mode)
13	L//R	I/O	Input channel select
14	SCLK	I/O	Serial data clock
15	SDATA	O	Serial data output
16	FSYNC	I/O	Frame synch. clock
17	VD+		Digital power supply (+)
18	DGND		Digital ground
19	CLK	I	Master clock
20	OCLK	O	128 fs clock output
21	NC		
22	ICLK	I	128 fs clock input
23	VA+		Analog power supply (+)
24	VA-		Analog power supply (-)
25	AINR-	I	Analog signal input (R channel -)
26	AINR+	I	Analog signal input (R channel +)
27	VREF-	O	Reference voltage (-)
28	VREF+	O	Reference voltage (+)

• **PCM1702P** (XN136A00) DAC (Digital to Analog Converter)

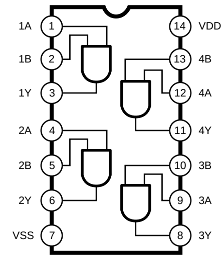
PIN NO.	NAME	I/O	FUNCTION
1	DATA	I	Serial data input
2	CLOCK	I	Bit clock
3	+Vdd		Digital power supply (+5V)
4	DGND	I	Digital ground
5	-Vdd		Digital power supply (-5V)
6	LE	I	Latch enable
7	NC		Reserved
8	NC		Reserved
9	+Vcc		Analog power supply (+5V)
10	BPO DC	I/O	BPO decouple
11	I OUT	O	Current output
12	AGND		Analog ground
13	AGND		Analog ground
14	SERVO DC	I/O	Servo decouple
15	REF DC	I/O	Ref. decouple
16	-Vcc		Analog power supply (-5V)

■ IC BLOCK DIAGRAM

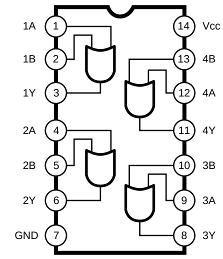
- **TCHCU04AF-TP1**(XD660A00)
  Hex Inverter



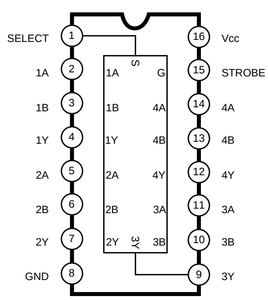
- **SN74HC08NSR** (XD831A00)
  Quad 2 Input AND



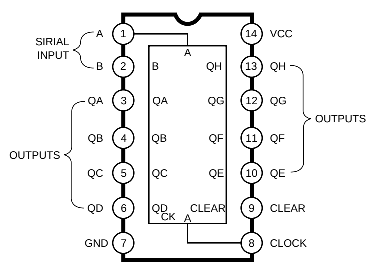
- **TC74VHC32F** (XN963A00)
  Quad 2 Input OR



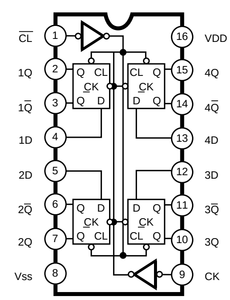
- **TC74HC157AF-TP1**(XH603A00)
  Quad 2 to 1 Multiplexer



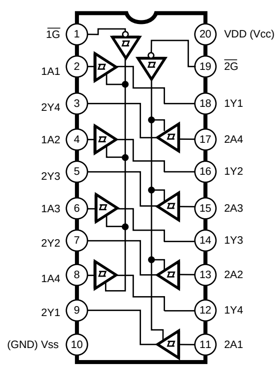
- **TC74HC164AF** (XQ967A00)
  8-Bit Shift Register



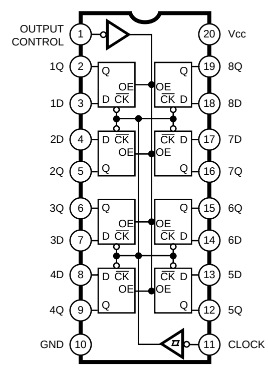
- **TC74HC175AF -TP1**(XD658A00)
  Quad D-Type Flip-Flop



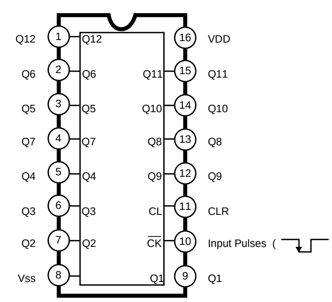
- **SN74HC244NSR** (XD233A00)
  Octal 3-State Bus Buffer



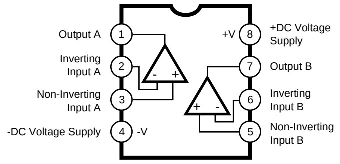
- **SN74HC374ANSR** (XQ042A00)
  Octal 3-State D-Type Flip-Flop



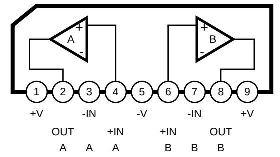
- **TC74HC4040F** (XR684A00)
  12-Stage Binary Ripple Counter



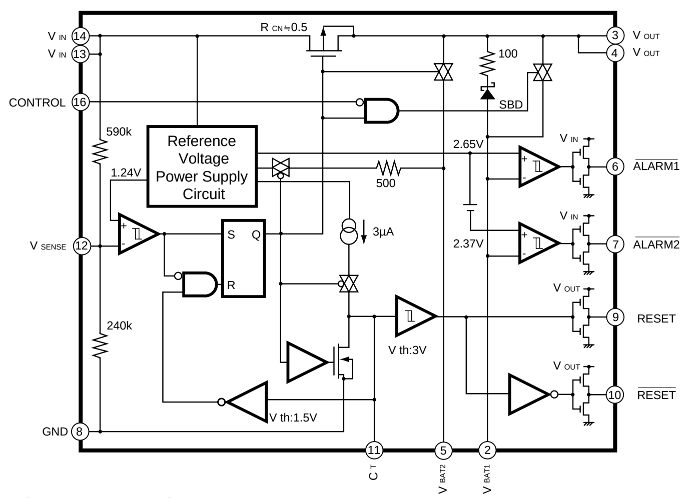
- **NE5532P**(IG102500)
  Dual Operational Amplifier

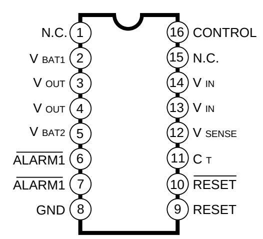


- **NJM072D**(IG107000)
  Dual Operational Amplifier

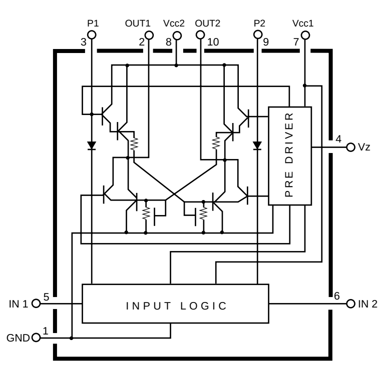


- **MB3790PF**(XR967A00)
  ASSP



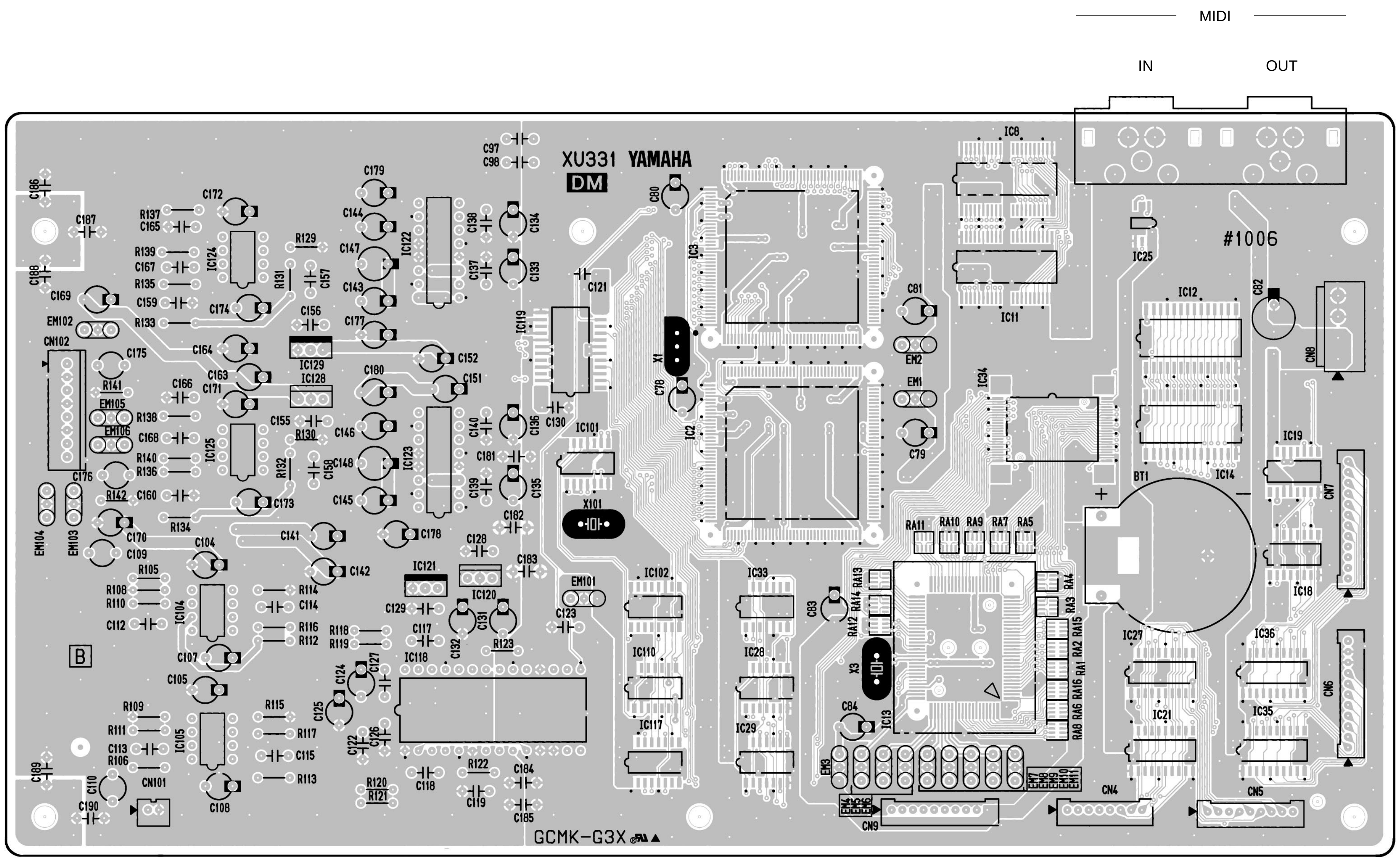


- **LB1641** (XF494A00)
  Motor Driver



■ CIRCUIT BOARDS

• DM Circuit Board

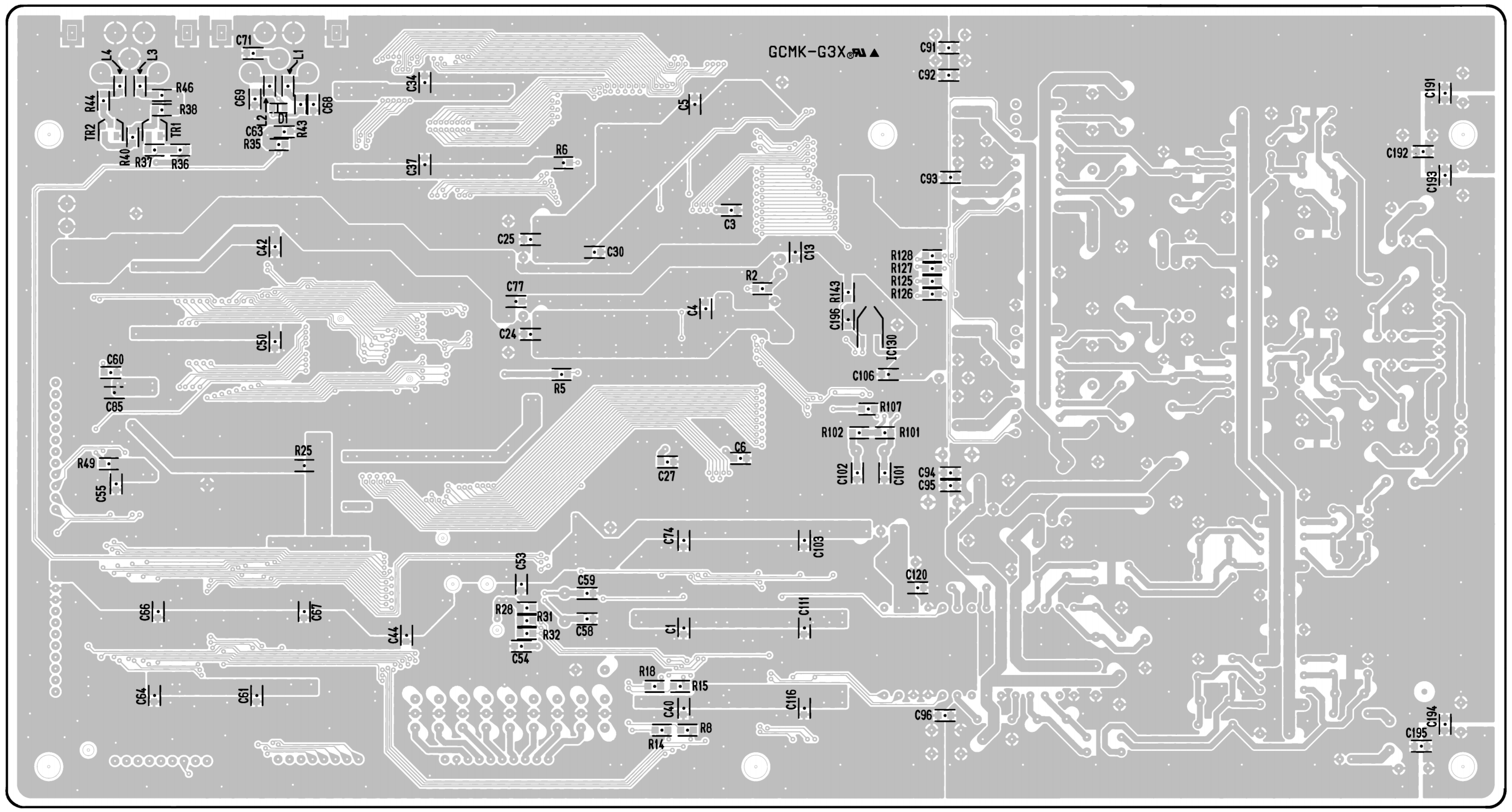


Component side

Note : See parts list for details of circuit board component parts.

ENA-VZ77180-1/9

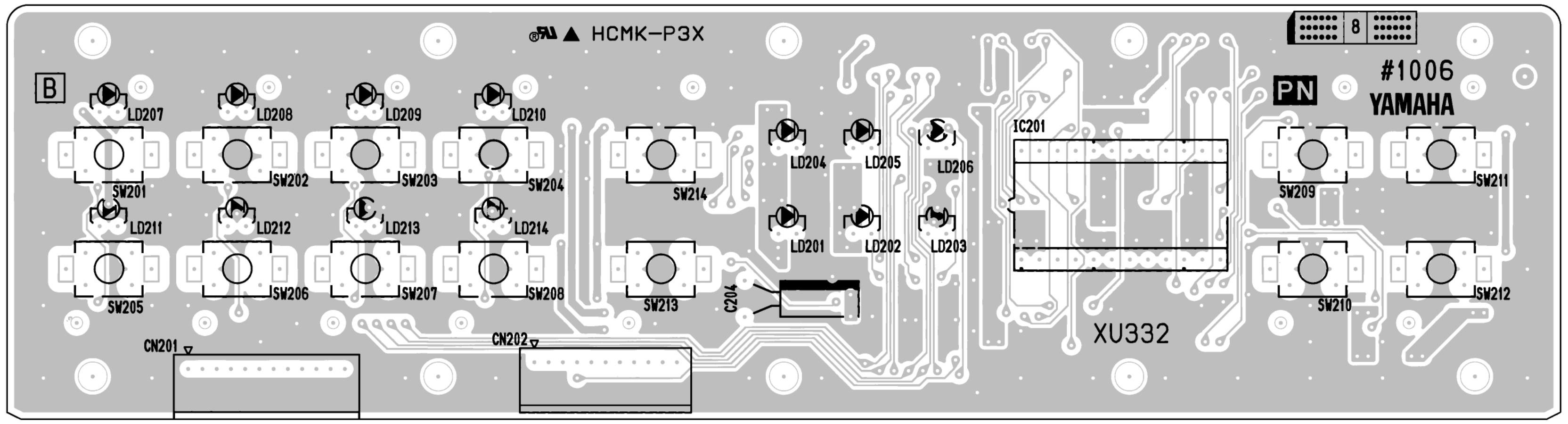
• DM Circuit Board



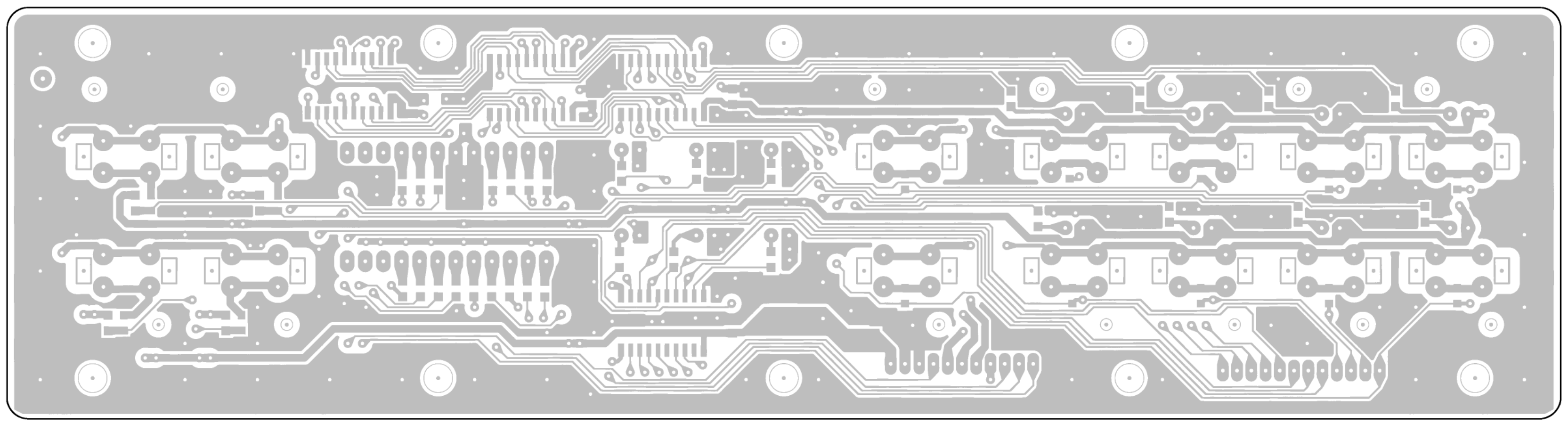
Pattern side

Note : See parts list for details of circuit board component parts.

- **PN Circuit Board**

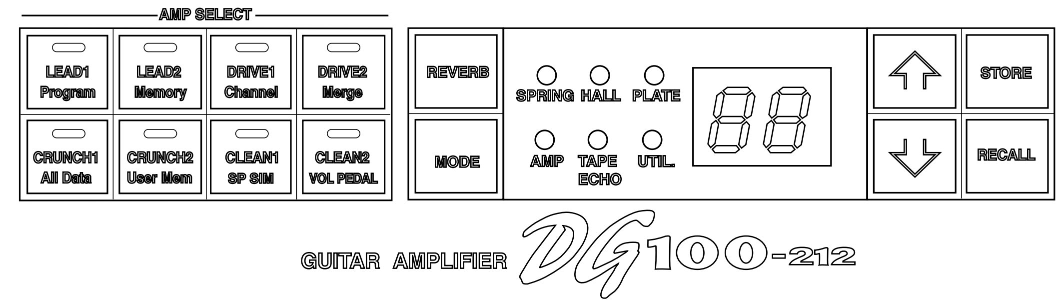


Component side

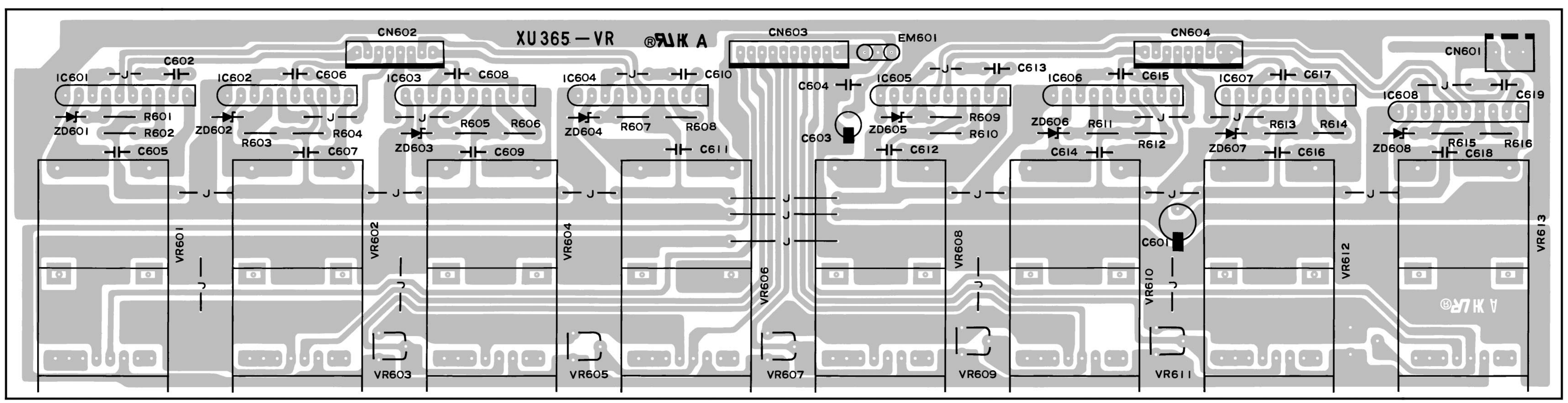


Pattern side

- **Panel Layout**



- **VR Circuit Board**



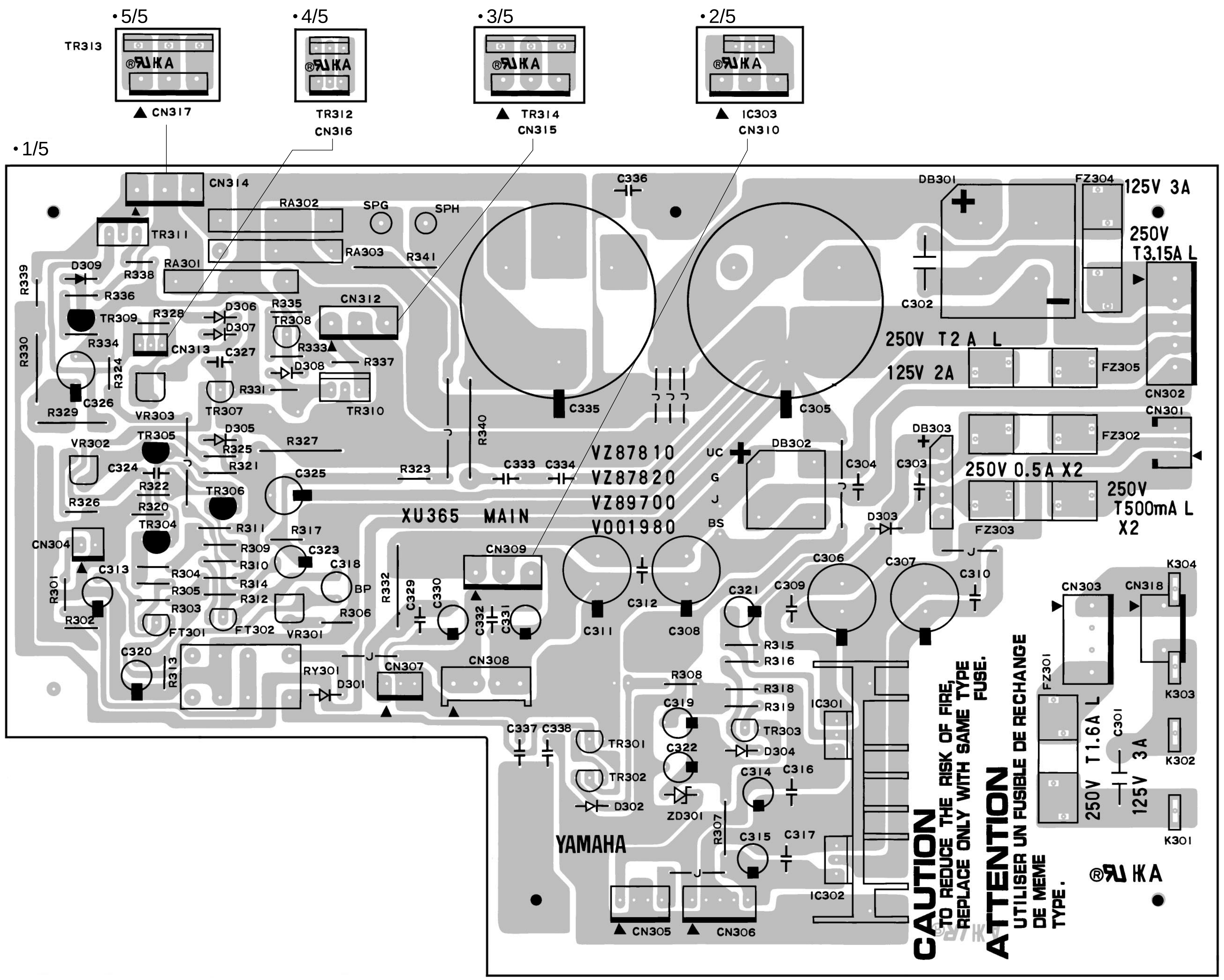
GAIN MASTER TREBLE HIGH MID LOW MID BASS TIME PRESENCE FEED BACK REVERB LEVEL

Component side

Note : See parts list for details of circuit board component parts.

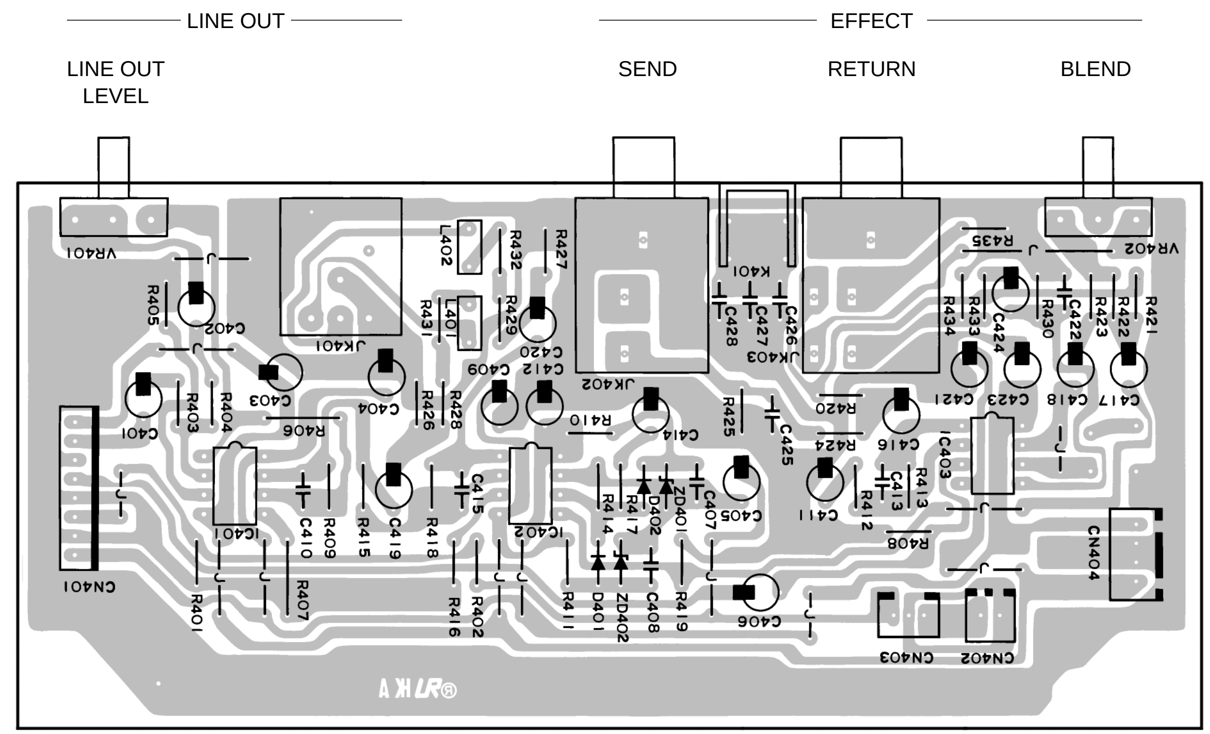
PN : ENA-VZ77230-1/4
VR : CNA-VZ89700-1/10

• MAIN Circuit Board



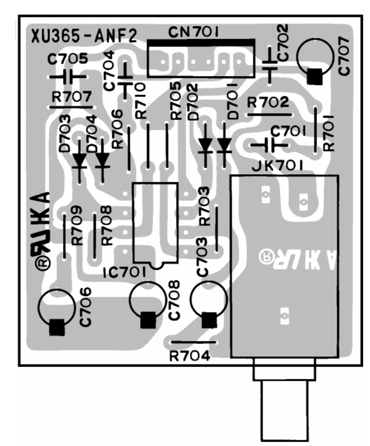
Component side

• ANR Circuit Board



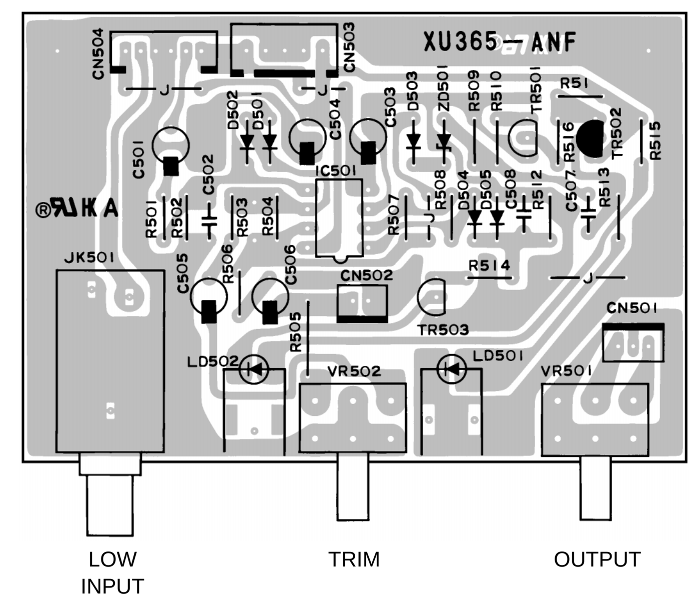
Component side

• ANF2 Circuit Board



Component side

• ANF Circuit Board



Component side

Note : See parts list for details of circuit board component parts.

CNA-VZ89700-1/10

TEST PROGRAM

A. SET-UP

1. If no specific frequency is required, set the test frequency at 1 kHz.
2. If no specific TRIM and OUTPUT settings are required, set the volumes of TRIM and OUTPUT at maximum.
3. Before turning the POWER switch on, set the Idling Adjustment Volume (VR303, 470 ohms) at minimum.

B. HOW TO ENTER THE TEST PROGRAM

While simultaneously pressing the MODE, the REVERB and the DRIVE2 switches, turn the POWER switch on. The DG100-212 will enter the self test mode.

C. FACTORY PRESET OF RAM

While simultaneously pressing the LEAD1 and the RECALL switches, turn POWER switch on. The RAM will be cleared, the factory setting data are restored on the RAM, and the DG100-212 will enter the normal mode.

D. PROCEEDING THROUGH THE TESTS

1. Switch Functions

Increment : test no. select upward
Decrement : test no. select downward
RECALL : start of the selected test
STORE : exit (in case of error)
LEAD1
 ~ CLEAN2 : no effect
REVERB, MODE : no effect

2. LED Display Functions

When the DG100-212 is in the self test mode, the LED display shows the number for the status as below.

Function (status)	LED display	
	upper num.	lower num.
test no. selection	(test no.)	(blank)
test execution	(test no.)	(check no.)
ok	***8.***	***8.***
error	***E***	(error no.)

If the LED displays "***E***" and "(error no.)", the DG100-212 status can be changed to "test no. selection" by pressing the STORE key. When the status has been changed, the LED display shows a next test no.

When the DG100-212 is in "test no. selection", the test no. can be changed by using the increment and the decrement keys.

E. TEST PROGRAM

(Relay Check)
Check that the relay is switched ON within 2 ~ 3 minutes after the POWER switch is turned on.

(Menu of Test Program)
0. LED Check
1. Switch Check
2. Motor Drive Volume check
3. Volume Center Check
4. Battery Check
5. MIDI Check
6. SRAM Check
7. Flash Memory Erase/Write Check
8. Sound Check
9. TEST END

0. LED Check

(Test Contents)
When the DG100-212 enters the self test mode, the LED Check is started and the LEDs light automatically for the check in the sequence as below.

·All the LEDs light simultaneously.
·All the LEDs go out simultaneously.
·The LEDs light one by one in the sequence as below.

LEAD1 Program
LEAD2 Memory
DRIVE1 Channel
DRIVE2 Merge
CRUNCH1 All Data
CRUNCH2 User Mem.
CLEAN1 SP SIM
CLEAN2 VOL PEDAL
SPRING
HALL
PLATE
AMP
TAPE ECHO
UTIL.
LED display upper num. top
LED display upper num. right upper
LED display upper num. right lower
LED display upper num. bottom
LED display upper num. left lower
LED display upper num. left upper
LED display upper num. center
LED display upper num. dot
LED display lower num. top
LED display lower num. right upper
LED display lower num. right lower
LED display lower num. bottom
LED display lower num. left lower
LED display lower num. left upper
LED display lower num. center
LED display lower num. dot

·All the LEDs go out simultaneously
·All the LEDs light simultaneously

The LED Check is finished and the DG100-212 selects the next test no., so the LED shows a "***1***".

(Error Number)
not appearing

1. Switch Check

Press the RECALL key when the LED display shows "***1***". The Switch Check is started and the LED display shows the first check number "***11***".

(Test Contents)
Press the keys according to the LED display guide in the order as below.
(The Exit function of the STORE key is available on the error status.)

11 LEAD1 Program Switch
12 LEAD2 Memory Switch
13 DRIVE1 Channel Switch
14 DRIVE2 Merge Switch
15 CRUNCH1 All Data Switch
16 CRUNCH2 User Mem. Switch
17 CLEAN1 SP SIM Switch
18 CLEAN2 VOL PEDAL Switch
19 REVERB Switch
1A MODE Switch
1B Increment Switch
1C Decrement Switch
1D STORE Switch
1E RECALL Switch

When all the LEDs display light simultaneously, the Switch Check is finished. Then the DG100-212 selects the next test no., so the LED display shows a "***2***".

(Error Number)
E1 ~ EE
The switch corresponding to the error number has a problem or the wrong switch was pressed.

2. Motor Drive Volume check

Press the RECALL key when the LED display shows "***2***", The Motor Drive Volume Check is started and the LED display shows the first check number "***21***".

(Test Contents)
Once the Motor Drive Check has been started, all the volumes rotate automatically as below.

21 to the Minimum
22 to the Maximum
23 to the Center

When all the LEDs light simultaneously, the Volume Check is finished. Then the DG100-212 selects the next test no., so the LED display shows a "***3***".

(Error Number)
E0 ~ E3
If a Motor Drive Volume Check operation has not been finished in 20 seconds, the LED display shows "***E0***" ~ "***E3***" by replacing "***2***" to "***E***".

3. Volume Center Check

Press the RECALL key when the LED display shows "***3***", and the Volume Check is started and the LED display shows one of the numbers from "***31***" to "***38***".

(Test Contents)
Select the knob that requires adjustment and turn it until the LED display shows the next volume check number.

33 TREBLE
34 HIGH MID
35 LOW MID
36 BASS
37 PRESENCE

The A/D converter value is shown with binary digits by using the AMP SELECT LEDs. Set the knob to the center and turn the trimmer potentiometer to adjust the AMP SELECT LEDs as shown on the list below.

AMP SELECT	LEAD1 Program	LEAD2 Memory	DRIVE1 Channel	DRIVE2 Merge
LED	On	Off	Off	Off

AMP SELECT	CRUNCH1 All Data	CRUNCH2 User Mem.	CLEAN1	CLEAN2
LED	Off	Off	Off	Off

If the knob data is the same as the data of the list above, the adjustment of that knob can be passed. The trimmer potentiometer numbers are shown below.

TREBLE : VR603
HIGH MID : VR605
LOW MID : VR607
BASS : VR609
PRESENCE : VR611

Once the required Volume Center Check has been finished, press the RECALL key and the DG100-212 selects the next test no., so the LED display shows "4".

(Error Number)
not appearing

4. Battery Check

Press the RECALL key when the LED display shows "5". The Battery Check is started.

(Test Contents)

The RAM Backup Battery check is executed automatically.
When all the LEDs light simultaneously, the Battery Check is finished. Then the DG100-212 selects the next test no., so the LED display shows "***5***".

(Error Number)

E0 : Battery Low (RAM DATA are kept.)
E1 : Unknown Error
E2 : Battery Low (RAM DATA are not kept.) or Not Installed

5. MIDI Check

Connect the MIDI IN and the MIDI OUT terminals with a MIDI cable. Press the RECALL key when the LED display shows "***5***". The MIDI Check is started.

(Test Contents)

The loop back MIDI check is executed automatically.
When the MIDI check is started, the LED display shows "***51***" and then "***52***". When all the LEDs light simultaneously, the MIDI Check is finished. Then the DG100-212 selects the next test no., so the LED display shows "***6***".

(Error Number)

E0 **:** Error
E1 **:** Error

6. SRAM Check

Press the RECALL key when the LED display shows "***6***". The SRAM Check is started.

(Test Contents)

The SRAM read/write check is executed automatically.
When the SRAM Check is started, the LED display shows "***61***" and then "***62***". When all the LEDs light simultaneously, the SRAM Check is finished. Then the DG100-212 selects the next test no., so the LED display shows "***7***".

(Error Number)

E0 **:** RAM Address Error
E1 **:** RAM Read/Write Error

7. Flash Memory Erase/Write Check

Press the RECALL key when the LED display shows "***7***". The Flash Memory Erase/Write Check is started.

(Attention)

When the result of the test number 6 has alredy been "Error", don't execute this test, or the DG100-212 won't set up at normal mode by the rewrited wrong data in the Flash Memory.
Don't turn the POWER switch off while executing this test, the DG100-212 won't set up at normal mode by no data in the Flash Memory.

(Test Contents)

The Flash Memory Erase/Write check is executed automatically.
When the check is started, the LED display shows from "***70***" to "***73***" successively. When all the LEDs light simultaneously, the Flash Memory Erase/Write check is finished. Then the DG100-212 selects the next test no., so the LED display shows "***8***".

(Error Number)

E0, E1 : Flash Erase Error
E2, E3 : Flesh Write Error

8. Sound Check

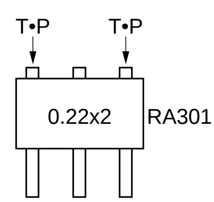
Before executing this sound check, the idling adjustment, the output wave adjustment and center voltage adjustment must be finished. the three adjustments can be done while the LED display shows "***8***".

(Idling Adjustment)

1. set the idling adjustment volume (VR303) at minimum.
2. connect the 4ohm load to the speaker terminals.
3. Set the output volume at minimum.
4. Adjust the VR303 so that the DC voltage between the terminals of the RA301 should be 5 mV +/-1 mV.

(Output Wave Adjustment)

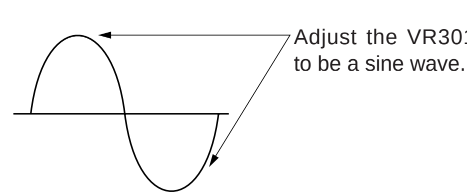
1. After adjusting the Idling adjustment, set the OUTPUT VR at maximum.
2. When the signal of -2dBm / 1 kHz is inputted from the RETURN terminal, adjust the VR 301 (4.7 kohms) so that the wave shape should be a sine wave symmetrical for upper and lower as below.



(Center Voltage Adjustment)

1. Adjust the VR302 so that the voltage of the output circuit (RA301) should be 34 +/- 1 V.

* By adjusting the Output Adjustment and the Center Voltage Adjustment alternatively, search the best point.



After finifhing the adjustments above, press the RECALL key when the LED display shows "***8***". The Sound Check is started.

(Test Contents)

The DG100-212 sets the conditions for the signal Sound Check through the analogue circuit, the A/D converter, the DSP-3 and the D/A Converter.

When the Sound Check is started, the LED display shows "***81***". The Sound Check has two conditions. If the RECALL key is pressed when the LED display shows "***81***", the LED display changes to "***82***" and the condition changes to the next as below.

81 : DSP3-1
82 : DSP3-2

Check the following items in each condition of "***81***" and "***82***".

Items	Conditions	Responses (standards)
1.Input Sensitivity (High)	1 kHz, -30dBm	+28 dBm +/-2 dB
2.Input Sensitivity (Low)	1 kHz, -20dBm	+28 dBm +/-2 dB
3.RETURN Level	1 kHz, 0dBm	+28 dBm +/-2 dB
4.SEND Level	Condition of 1. and 100 kohms SEND load	-1 dBm +/-2 dB
5.LINE OUT Level	Condition of 1. and 100 kohms LINE OUT load	+3 dBm +/-2 dB
6.Frequency Response (HIGH IN)	-40 dBm Input 1 kHz standard SP Output Terminal	100 Hz: 0.5 +/-1dB 10 kHz: 0.5 +/-1dB
7.Remain Noise	TRIM, OUTPUT VR MIN IHF A net	less than -60 dBm
8.Sensitivity of LED for Input Level	Lo Input TRIM Vol: maximum OUTPUT Vol: maximum	Input LED -30 dBm: no light -20 dBm: GR only +3 dBm: both lit
9.Output	RETURN,10%THD	more than +28 dBm (95W)

* 0 dBm = 0.775 V   Load = 4 ohms

If the Sound Check has been finished, press the RECALL key when the LED display shows "***82***". The LED display shows "***9***".

(Error Number)

not appearing

9. TEST END

A "***9***" on the LED display signals the end of the TEST and the exit of the Test Program. Press the RECALL key when the LED display shows "***9***". The mode of the DG100-212 changes to the normal mode and all of the function data are set to the condition of the latest program number in normal mode. The Motor Drive Volumes rotate automatically to the settings of that data.

ERROR MESSAGES

If an error occurs during operation, one of the following error message numbers will appear on the display.

E 1 : **Motor Drive Error**

CAUSE: The volume knob has not returned to its assigned position after 20 seconds has elapsed from the start of the recall operation or, the device does not recognize the recall command.

SOLUTION: Turn off the power and check the circuit for Motor Drive.

E 2 : **MIDI Receive Buffer Full**

CAUSE: Too much MIDI data is being received by the DG100-212 at one time.

SOLUTION: Try reducing the amount of data being sent or, break the data into smaller blocks.

E 3 : **Communication Error.**

CAUSE: An abnormality is detected during MIDI communications.

SOLUTION: Check all connections, etc. and try again.

E 4 : Bulk Receive Check Sum Error.

CAUSE: The check sum does not match the received MIDI bulk data.

SOLUTION: Check all connections and data, and try again.

E 5 : Bulk Receive Data Abnormality.

CAUSE: An abnormality is detected in the received MIDI bulk data.

SOLUTION: Check all connections and data, and try again.

E 6 : Backup Battery Error.


CAUSE: Backup battery power is depleted.

SOLUTION: Continued use of the device will result in the loss of data. Return the device to the music dealer where you purchased it or, the nearest Yamaha Service center and have the battery replaced.

YAMAHA [Digital Guitar Amplifier] Date:24-Dec-1997
Model DG100-212 MIDI Implementation Chart Version : 1.0

Function ...		Transmitted	Recognized	Remarks
Basic Channel	Default	x	1 - 16, off	memorized
	Changed	x	1 - 16, off	
Mode	Default	x	1,3	memorized
	Messages	x	x	
	Altered	**************	x	
Note Number		x	x	
	: True voice	**************	x	
Velocity	Note ON	x	x	
	Note OFF	x	x	
After Touch	Key's	x	x	
	Ch's	x	x	
Pitch Bender		x	x	
Control Change	0 - 6	x	x	
	7	x	o	Main Volume
	8 - 90	x	x	
	91	x	o	Reverb SW.
	92	x	x	
	94	x	o	Tape Echo SW.
	95 - 127	x	x	
Prog Change		x	o 0 - 127	Program Change Number 1-128
	: True #	**************		
System Exclusive		o	o	Bulk Dump
System common	: Song Pos.	x	x	
	: Song Sel.	x	x	
	: Tune	x	x	
System Real Time	:Clock	x	x	
	:Commands	x	x	
Aux Messages	:Local ON/OFF	x	x	
	:All Notes OFF	x	x	
	:Active Sense	o	x	
	:Reset	x	x	

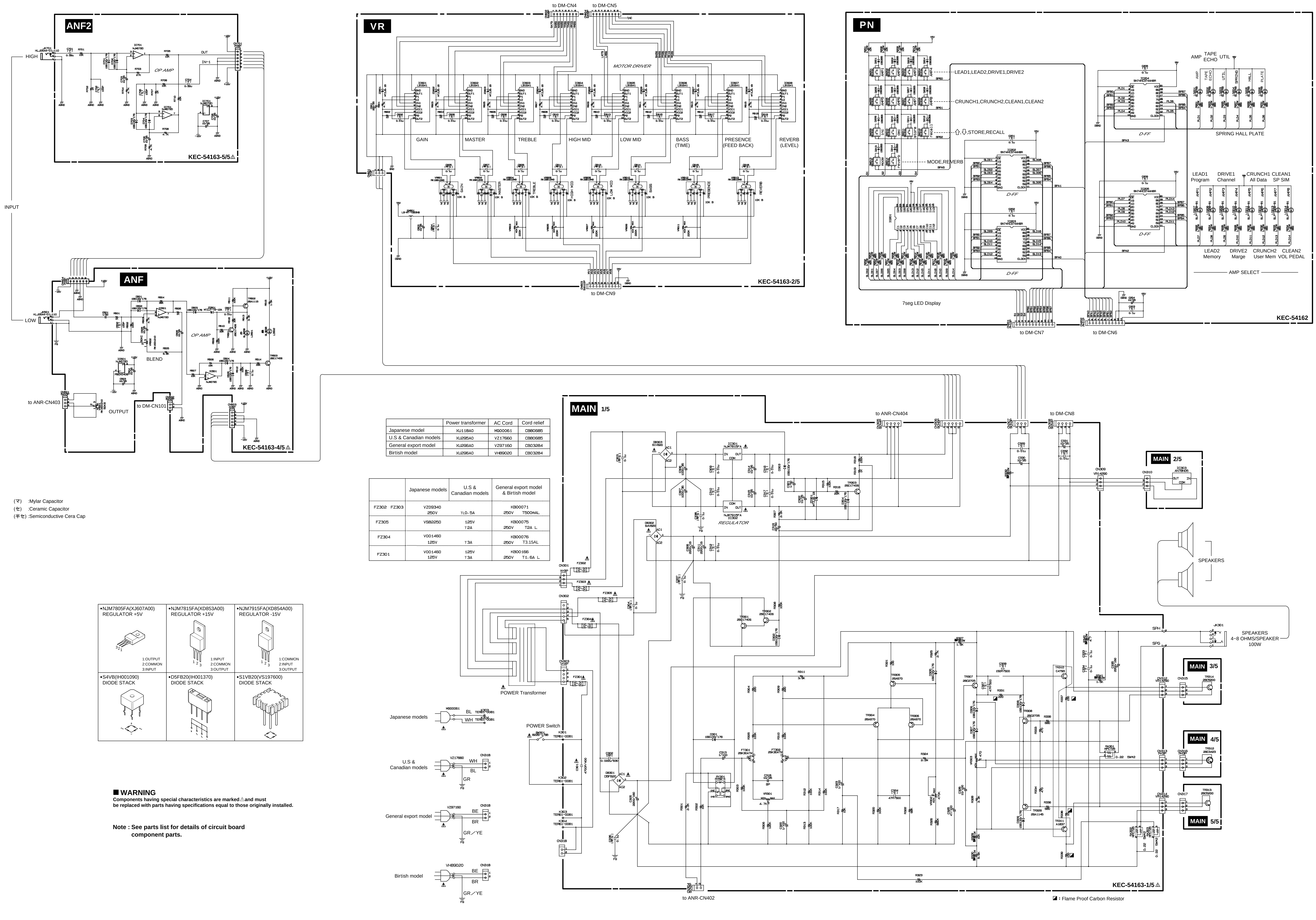
Mode 1 : OMNI ON, POLY Mode 2 : OMNI ON, MONO o : Yes
Mode 3 : OMNI OFF, POLY Mode 4 : OMNI OFF, MONO x : No



(マ) :Mylar Capacitor
(セ) :Ceramic Capacitor
(半セ):Semicondactive Cera Cap

Note : See parts list for details of circuit board component parts.

■DG100-212 OVERALL CIRCUIT DIAGRAM 2/2 (MAIN1/5~5/5,PN,VR,ANF,ANF2)



	Power transformer	AC Cord	Cord relief
Japanese model	XU118A0	MG00061	CB80685
U.S & Canadian models	XU295A0	VZ17660	CB80685
General export model	XU296A0	VZ97160	CB03284
Birtish model	XU296A0	VH89020	CB03284

	Japanese models	U.S & Canadian models	General export model & Birtish model
FZ302 FZ303	VZ09340 250V	TL0.5A	KB00071 250V T500mAL
FZ305	VS82250	125V T2A	KB00075 250V T2A L
FZ304	V001460 125V	T3A	KB00076 250V T3.15AL
FZ301	V001460 125V	125V T3A	KB00166 250V T1.6A L

(マ) :Mylar Capacitor
(セ) :Ceramic Capacitor
(半セ) :Semiconductive Cera Cap

■ WARNING

Components having special characteristics are marked ⚠ and must be replaced with parts having specifications equal to those originally installed.

Note : See parts list for details of circuit board component parts.

GUITAR AMPLIFIER

DG100-212

PARTS LIST

■ **CONTENTS**

Notes : DESTINATION ABBREVIATIONS

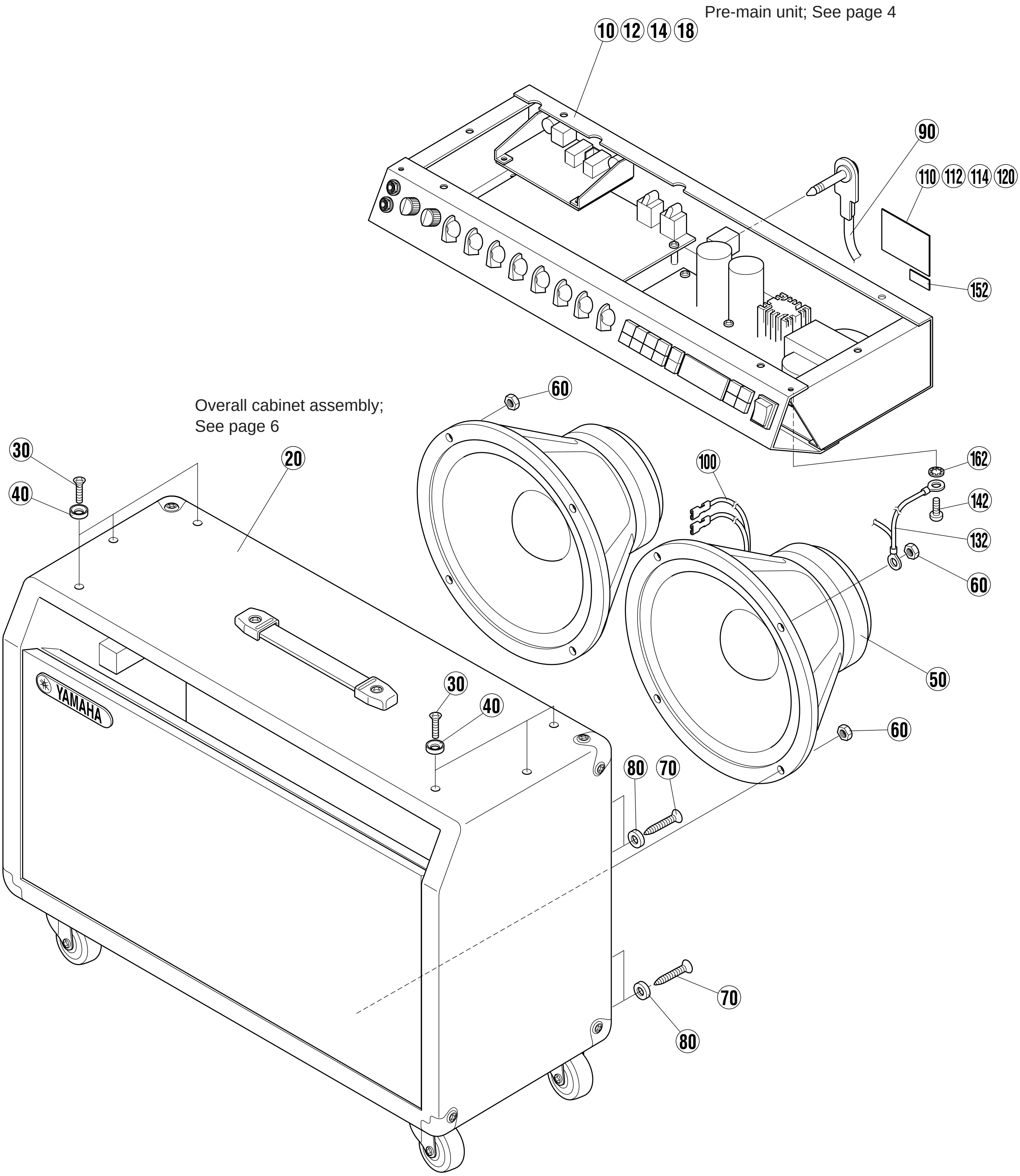
J	: Japanese model	A	: Australian model
U	: U.S.A. model	E	: European model
C	: Canadian model	D	: German model
X	: General model	B	: British model
M	: South African model	I	: Indonesian model
H	: North European model	O	: Chinese model

▪ **WARNINNG**

Components having special characteristics are marked ⚠ and must be replaced with parts having specifications equal to those originally installed.

· The numbers in "QTY " show quantities for each unit.
· The parts with "- - " in "PART NO. " are not available as spare parts.

OVERALL ASSEMBLY

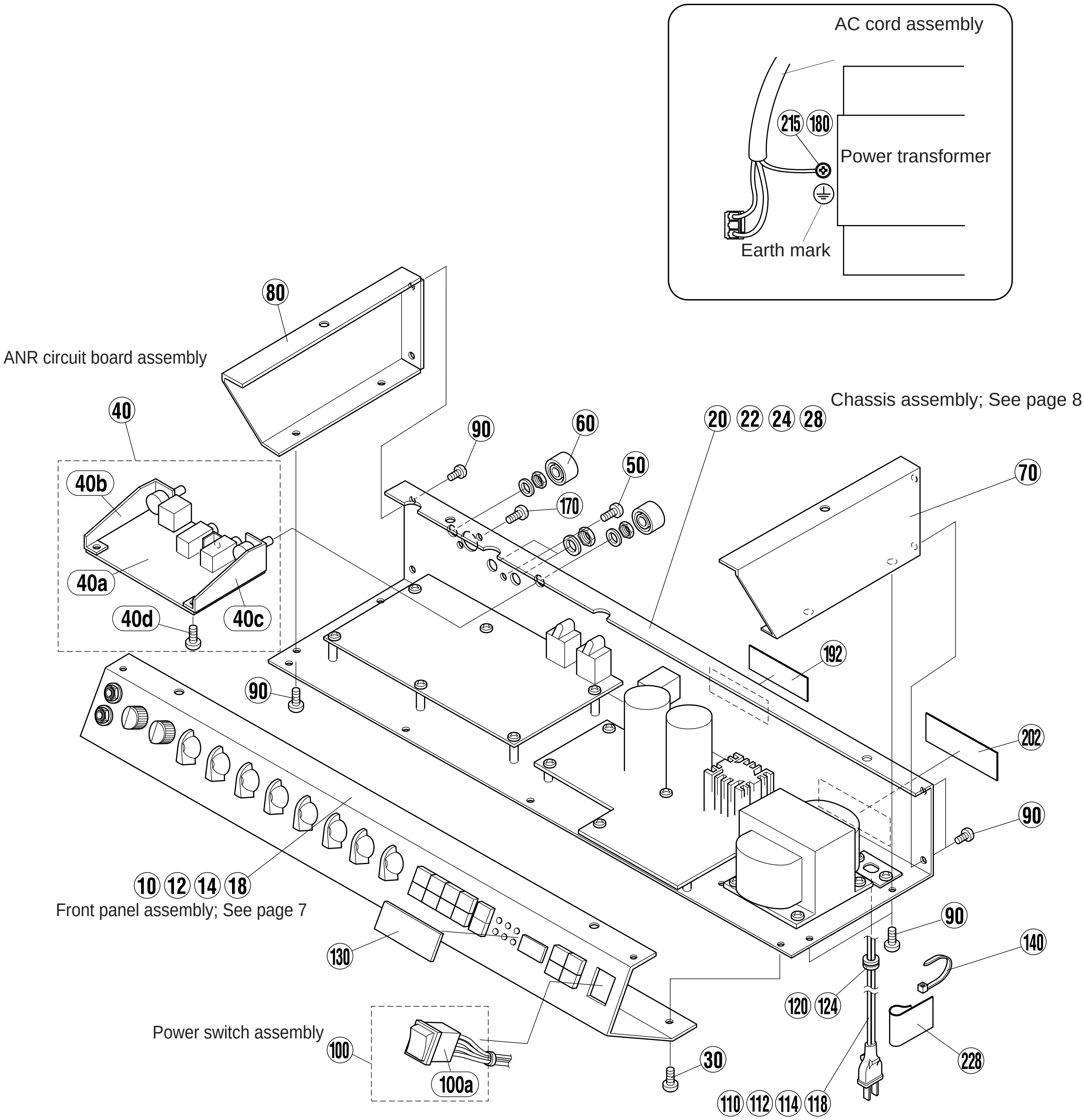


	REF NO.	PART NO.	DESCRIPTION			REMARKS		QTY	RANK
			OVERALL ASSEMBLY			DG100-212			
	10	——	Pre-main Unit			J	(VZ74050)		
	12	——	Pre-main Unit			U	(VZ74060)		
	14	——	Pre-main Unit			E	(VZ74800)		
	18	——	Pre-main Unit			B	(VZ74810)		
*	20	VZ893900	OVERALL CABINET ASSEMBLY						
	30	VP104600	Oval Head Screw	5.0X35 MFC2BL				6	01
	40	EW300020	Washer	5S MFC2BL				6	01
*	50	XU436A00	Speaker	VINTAGE30				2	
	60	EX000990	Hexagonal Nut	5.0 MFZN2BL			(2004040)	8	
	70	EN240090	Oval Head Screw	4.0X30 MFC2BL				8	01
	80	VB890200	Washer	4S MFC2BL				8	01
	90	VR144600	Connector Assembly	L=500mm					06
	100	VR145100	Connector Assembly	L=200mm					03
*	110	——	Name Plate			J	(VZ74070)		
*	112	——	Name Plate			U	(VZ74080)		
*	114	——	Name Plate			E,B	(VZ73630)		
	120	——	Label, Serial Numbe				(CB06869)	2	01
*	132	VZ992800	Connector Assembly	SP FRAME		U			
	142	VP156800	Bind Head Screw	A4.0X8 MFZN2BL		U			01
	152	——	Label			U	(VA03930)		
*	162	ET800070	Toothed Lock Washer-A	4.0 MFZN2BL		U			

*: New Parts

RANK:Japan only

■ PRE-MAIN UNIT

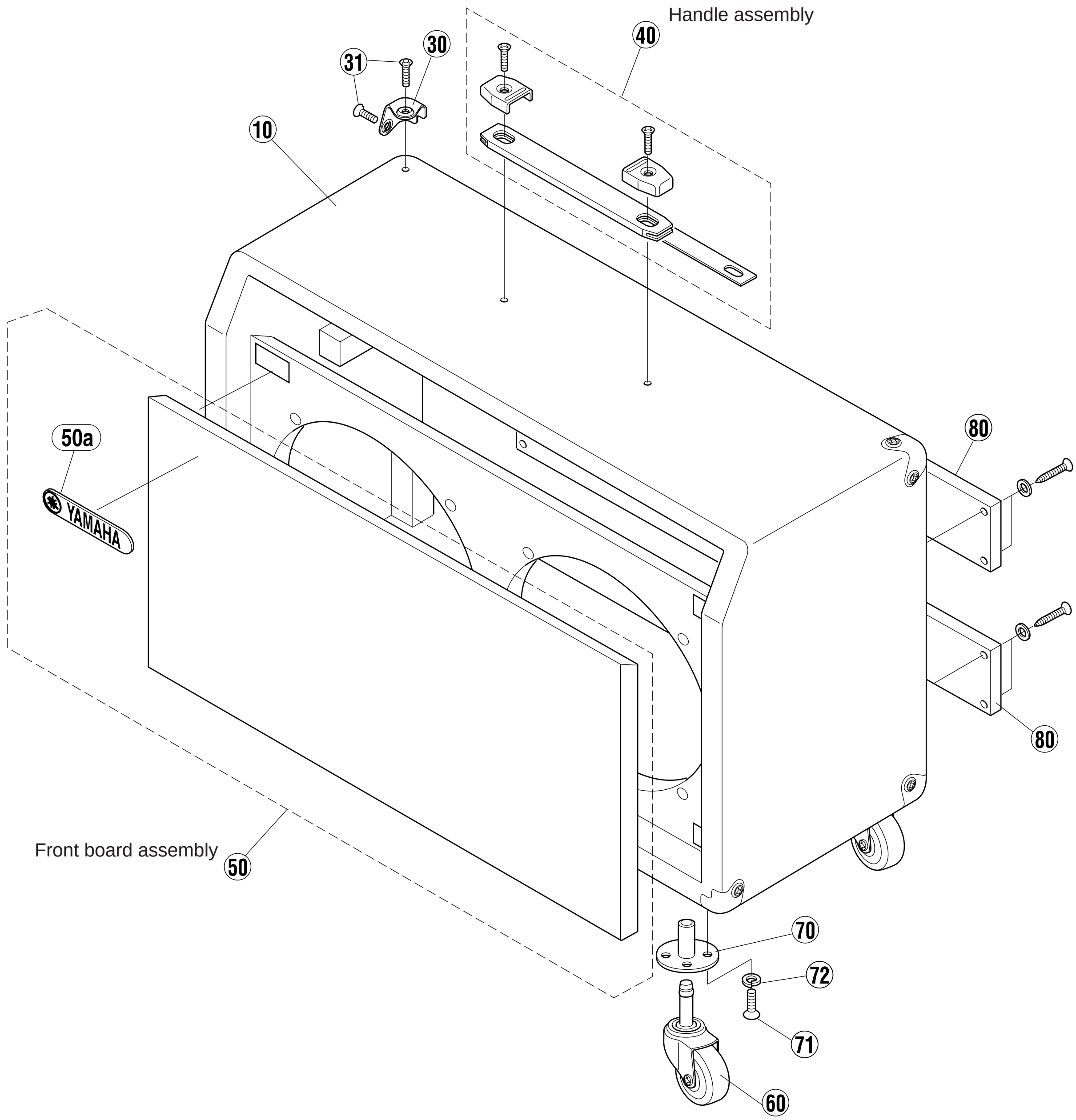


	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
			PRE-MAIN UNIT			DG100-212		
		——	Pre-main Unit			J (VZ74050)		
		——	Pre-main Unit			U (VZ74060)		
		——	Pre-main Unit			E (VZ74800)		
		——	Pre-main Unit			B (VZ74810)		
	10	——	Front Panel Assembly			J (VZ74040)		
	12	——	Front Panel Assembly			U (V001390)		
	14	——	Front Panel Assembly			E (V001400)		
	18	——	Front Panel Assembly			B (V001410)		
	20	——	Chassis Assembly			J (VZ74020)		
	22	——	Chassis Assembly			U (VZ74030)		
	24	——	Chassis Assembly			E (VZ74780)		
	28	——	Chassis Assembly			B (VZ74790)		
	30	**VP156800**	Bind Head Screw	A4.0X8 MFZN2BL			5	01
	40	——	ANR Circuit Board Assembly			(VZ74390)		
*	40a	**VZ974400**	Circuit Board	ANR		(XU365B0)		
*	40b	**VZ746600**	Sub Angle, L					
*	40c	**VZ746500**	Sub Angle, R					
	40d	**EK400500**	Pan Head Screw	SP 3.0X8 MFZN2Y			2	01
	50	**VP156700**	Bind Head Screw	A3.0X8 MFZN2BL				01
	60	**VU578300**	Volume Knob			BLEND,LINE OUT LEVEL	2	04
*	70	**VZ736500**	Side Angle					
*	80	**VZ736600**	Side Angle					
	90	**VP156700**	Bind Head Screw	A3.0X8 MFZN2BL			8	01
	100	——	Power Switch Assembly			(V225770)		
⚠ *	100a	**V2217000**	Switch	JW		POWER switch		
⚠	110	**MG000610**	AC Cord	J 2P 15A 2.1m		J		06
⚠ *	112	**VZ176600**	AC Cord Assembly	UC 3P SJT VAR		U		
⚠ *	114	**VZ971600**	AC Cord Assembly	E 3P 6A VAR		E		
⚠ *	118	**V2017600**	AC Cord Assembly	BS 3P 10A 2.5m		B		
	120	**CB806850**	Cord Strain Relief	SR-6N3-4				02
	124	**CB032840**	Cord Strain Relief	SR-5N-4		E		03
*	130	**VZ735700**	Meter Cover	DG100-212				
	140	**CB069250**	Cord Holder	BK-1			10	01
	170	**EP600190**	Bind Head Tapping Screw-B	3.0X8 MFZN2BL			2	01
	180	**VP156800**	Bind Head Screw	A4.0X8 MFZN2BL		U,E		01
*	192	**V2135100**	Label	C.UL		U		
	202	——	FCC Label			U (V222070)		
*	215	**ET800070**	Toothed Lock Washer-A	4.0 MFZN2BL		U,E		
	228	**VH096700**	Caution Label, Cord			B		01

*: New Parts

RANK:Japan only

■ OVERALL CABINET ASSEMBLY

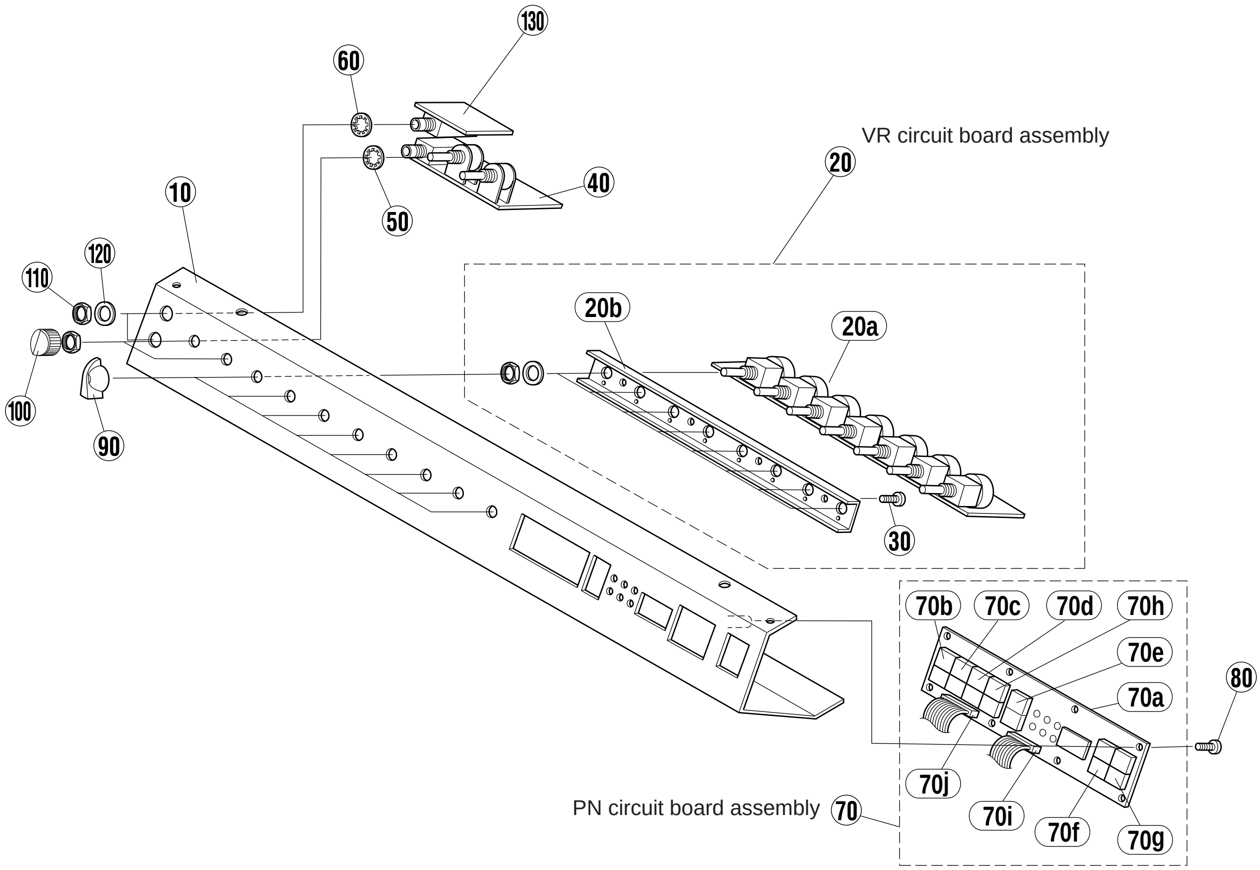


	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
*		VZ893900	OVERALL CABINET ASSEMBLY			DG100-212		
	10	——	Cabinet Assembly			(VZ89410)		
	20	——	Vinyl	122KURO 9A		(VZ89440)		
	30	AA809050	Corner				6	05
	31	EX802320	Round Head Wood Screw	3.5X16 FNM33G			16	
	40	NB812640	Handle Assembly					
*	50	VZ894500	Front Board Assembly					07
*	50a	V2237300	Name Plate					
	60	AA801680	Caster				4	
	70	AA801690	Socket	NO.15 ZMC2-BL			4	06
	71	VB857600	Bind Head Screw	5.0X20 ZMC2BL			16	04
	72	EX802310	Spring Washer	#2 5.0 FCM3BL			16	01
*	80	VZ894600	Back Board				2	
*	90	V2168900	Shield Sheet					

*: New Parts

RANK:Japan only

■ FRONT PANEL ASSEMBLY

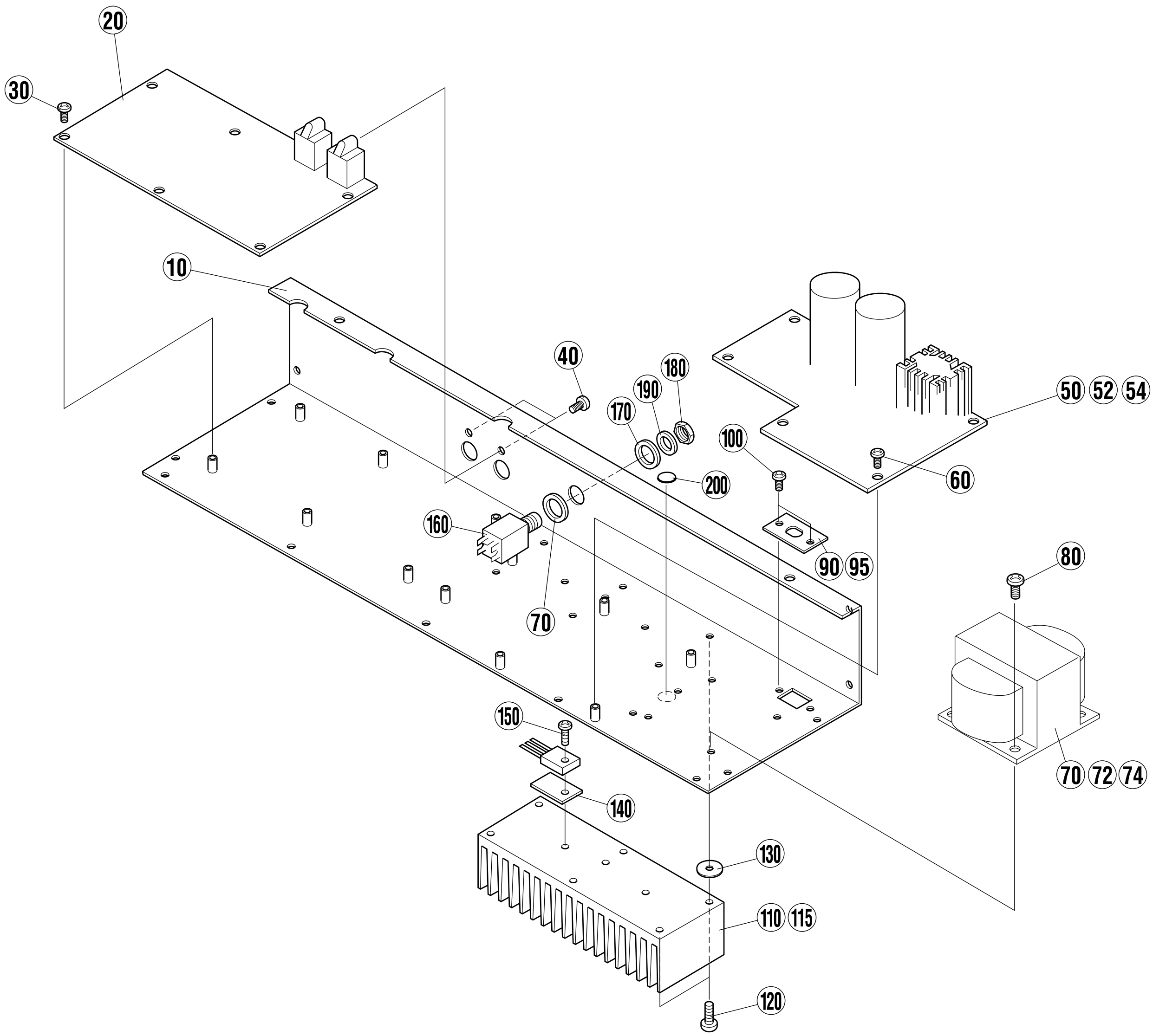


REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
	——	Front Panel Assembly			DG100-212 J (VZ74040)		
	——	Front Panel Assembly			DG100-212 U (V001390)		
	——	Front Panel Assembly			DG100-212 E (V001400)		
	——	Front Panel Assembly			DG100-212 B (V001410)		
* 10	VZ736200	Front Panel					
20	——	VR Circuit Board Assembly			(VZ74000)		
* 20a	VZ974200	Circuit Board	VR		(XU365B0)		
* 20b	VZ736100	Angle, Motor Volume					
30	EP600230	Bind Head Tapping Screw-B	3.0X6 MFZN2BL			4	01
* 40	VZ974600	Circuit Board	ANF		(XU365B0)		
50	ET800080	Toothed Lock Washer-A	7.0 MFZN2Y			2	01
60	ET800150	Toothed Lock Washer-A	9.0 MFZN2Y			2	01
70	——	PN Circuit Board Assembly			(VZ74010)		
* 70a	VZ772300	Circuit Board	PN		(XU332A0)		
70b	VV374000	Top Cap Assembly			LEAD1/CRUNCH1		06
70c	VV374100	Top Cap Assembly			LEAD2/CRUNCH2		06
* 70d	VZ739800	Top Cap Assembly			DRIVE1/CLEAN1		
* 70e	VZ739900	Top Cap Assembly			REVERB/MODE		
70f	VV374500	Top Cap Assembly			cursor(up/down)		06
70g	VV374600	Top Cap Assembly			STORE/RECALL		06
* 70h	V2134000	Top Cap Assembly			DRIVE2/CLEAN2		
70i	——	PH Connector Assembly	11P L=300 C&C		(VZ97520)		
70j	——	PH Connector Assembly	12P L=300 C&C		(VZ97530)		
80	EP600230	Bind Head Tapping Screw-B	3.0X6 MFZN2BL			10	01
90	VV945400	Knob, VOLUME(CH)			GAIN,......,REVERB	8	05
100	VU578300	Knob, VOLUME(S)			TRIM,OUTPUT	2	04
110	LX200060	Hexagonal Nut	9.0 12X2 MFNI33			2	01
120	VL802300	Flat Washer	9X14 0.5 FNM3			2	01
* 130	V2156100	Circuit Board	ANF2		(XU365B0)		

*: New Parts

RANK:Japan only

CHASSIS ASSEMBLY



	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
		——	Chassis Assembly			DG100-212 J (VZ74020)		
		——	Chassis Assembly			DG100-212 U (VZ74030)		
		——	Chassis Assembly			DG100-212 E (VZ74780)		
		——	Chassis Assembly			DG100-212 B (VZ74790)		
*	10	VZ735800	Chassis					
*	20	VZ771800	Circuit Board	DM		(XU331B0)		
	30	EP600230	Bind Head Tapping Screw-B	3.0X6 MFZN2BL			8	01
	40	EP600190	Bind Head Tapping Screw-B	3.0X8 MFZN2BL			2	01
*	50	VZ974000	Circuit Board	MAIN		J (XU365B0)		
*	52	VZ975900	Circuit Board	MAIN		U (XU365B0)		
*	54	VZ976300	Circuit Board	MAIN		E,B (XU365B0)		
	60	EP600230	Bind Head Tapping Screw-B	3.0X6 MFZN2BL			6	01
⚠ *	70	XU118A00	Power Transformer			J		
⚠ *	72	XU295A00	Power Transformer			U		
⚠ *	74	XU296A00	Power Transformer			E,B		
	80	VP156800	Bind Head Screw	A4.0X8 MFZN2BL			4	01
*	90	VZ735900	Bush Plate			J,U		
*	95	VZ736000	Bush Plate			E,B		
	100	VP156600	Bind Head Screw	A3.0X6 MFZN2BL			2	01
*	110	VZ739200	Heat Sink			J,U		
*	115	V0029700	Heat Sink			E,B		
	120	VP156900	Bind Head Screw	A4.0X12 MFZN2BL			6	01
*	130	VZ736400	Spacer, Heat Sink				6	
	140	VK196000	Sheet	BFG-20ADH-6 22X29			2	01
	150	EL200070	Pan Head Screw	SP 3.0X12 MFZN2Y			4	01
	160	LB201120	Phone Jack	JL2B X-G7639		SPEAKER		03
	170	VL786300	Spacer, Speaker Out	SR400B300G			2	04
	180	LX200060	Hexagonal Nut	9.0 12X2 MFNI33				01
	190	VL802300	Flat Washer	9X14 0.5 FNM3				01
	200	CA060690	Earth Mark			U,E,B		01

*: New Parts

RANK:Japan only

ELECTRICAL PARTS

	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
			ELECTRICAL PARTS			DG100-212		
*		**VZ771800**	Circuit Board	DM		(XU331B0)		
*		**VZ974000**	Circuit Board	MAIN		J (XU365B0)		
*		**VZ975900**	Circuit Board	MAIN		U (XU365B0)		
*		**VZ976300**	Circuit Board	MAIN		E,B (XU365B0)		
*		**VZ974200**	Circuit Board	VR		(XU365B0)		
*		**VZ974600**	Circuit Board	ANF		(XU365B0)		
*		**V2156100**	Circuit Board	ANF2		(XU365B0)		
*		**VZ974400**	Circuit Board	ANR		(XU365B0)		
*		**VZ772300**	Circuit Board	PN		(XU332B0)		
*		**VZ771800**	Circuit Board	DM		(XU331B0)		
	BT1	**VS246400**	Lithium Battery	CR2450				03
	BT1	**VS246300**	Battery Holder	CR2450BH				03
	C001	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C003	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	-006	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C013	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C024	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C025	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C027	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C030	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C034	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C037	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C040	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C042	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C044	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C050	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C053	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	-055	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C058	**UB051120**	Monolithic Ceramic Cap.	SL 12P 50V J				01
	C059	**UB052100**	Monolithic Ceramic Cap.	SL 100P 50V J				01
	C060	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C061	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C063	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C064	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C066	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C067	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C068	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
	C069	**UB044100**	Monolithic Ceramic Cap.	F 0.010 50V Z				01
	C071	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C074	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C077	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
*	C078	**UR828100**	Electrolytic Cap.	100.00 10.0V				
*	-081	**UR828100**	Electrolytic Cap.	100.00 10.0V				
*	C082	**UR848220**	Electrolytic Cap.	220.00 25.0V				
	C083	**UR847100**	Electrolytic Cap.	10.00 25.0V				01
	C084	**UR847100**	Electrolytic Cap.	10.00 25.0V				01
	C085	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C091	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	-096	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C097	**VD930900**	Semiconductive Cera. Cap.	0.1000 25V M				01
	C098	**VD930900**	Semiconductive Cera. Cap.	0.1000 25V M				01
	C101	**VJ899000**	Monolithic Ceramic Cap.	CH 5P 50V C				01
	C102	**VJ899000**	Monolithic Ceramic Cap.	CH 5P 50V C				01
	C103	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C104	**UR847100**	Electrolytic Cap.	10.00 25.0V				01
	C105	**UR847100**	Electrolytic Cap.	10.00 25.0V				01
	C106	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C107	**UR847100**	Electrolytic Cap.	10.00 25.0V				01
	C108	**UR847100**	Electrolytic Cap.	10.00 25.0V				01
	C109	**UN847100**	Electrolytic Cap.-BP	10.00 25.0V				01
	C110	**UN847100**	Electrolytic Cap.-BP	10.00 25.0V				01
	C111	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C112	**FG651680**	Ceramic Capacitor-SL	68P 50V J				01
	C113	**FG651680**	Ceramic Capacitor-SL	68P 50V J				01
	C114	**FG651220**	Ceramic Capacitor-SL	22P 50V J				01
	C115	**FG651220**	Ceramic Capacitor-SL	22P 50V J				01
	C116	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C117	**UA353680**	Mylar Capacitor	6800P 50V J				01

*: New Parts

RANK:Japan only

REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
C118	UA353680	Mylar Capacitor	6800P 50V J				01
C119	VD930900	Semiconductive Cera. Cap.	0.1000 25V M				01
C120	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z				01
C121	VD534400	Monolithic Ceramic Cap.	1.500 25V Z				01
C122	VD930900	Semiconductive Cera. Cap.	0.1000 25V M				01
C123	VD534400	Monolithic Ceramic Cap.	1.500 25V Z				01
C124	UR847100	Electrolytic Cap.	10.00 25.0V				01
C125	UR847100	Electrolytic Cap.	10.00 25.0V				01
C126	VD930900	Semiconductive Cera. Cap.	0.1000 25V M				01
-129	VD930900	Semiconductive Cera. Cap.	0.1000 25V M				01
C130	VD534400	Monolithic Ceramic Cap.	1.500 25V Z				01
C131	UR847220	Electrolytic Cap.	22.00 25.0V				
C132	UR847220	Electrolytic Cap.	22.00 25.0V				
C133	UR847100	Electrolytic Cap.	10.00 25.0V				01
-136	UR847100	Electrolytic Cap.	10.00 25.0V				01
C137	VD930900	Semiconductive Cera. Cap.	0.1000 25V M				01
-140	VD930900	Semiconductive Cera. Cap.	0.1000 25V M				01
C141	UR847220	Electrolytic Cap.	22.00 25.0V				
-143	UR847220	Electrolytic Cap.	22.00 25.0V				
C144	UR847470	Electrolytic Cap.	47.00 25.0V				01
C145	UR847220	Electrolytic Cap.	22.00 25.0V				
C146	UR847470	Electrolytic Cap.	47.00 25.0V				01
C147	UR848100	Electrolytic Cap.	100.00 25.0V				01
C148	UR848100	Electrolytic Cap.	100.00 25.0V				01
C151	UR847220	Electrolytic Cap.	22.00 25.0V				
C152	UR847220	Electrolytic Cap.	22.00 25.0V				
C155	VD930900	Semiconductive Cera. Cap.	0.1000 25V M				01
C156	VD930900	Semiconductive Cera. Cap.	0.1000 25V M				01
C157	FG651680	Ceramic Capacitor-SL	68P 50V J				01
C158	FG651680	Ceramic Capacitor-SL	68P 50V J				01
C159	UA353330	Mylar Capacitor	3300P 50V J				
C160	UA353330	Mylar Capacitor	3300P 50V J				
C163	UR847220	Electrolytic Cap.	22.00 25.0V				
C164	UR847220	Electrolytic Cap.	22.00 25.0V				
C165	UA352470	Mylar Capacitor	470P 50V J				01
C166	UA352470	Mylar Capacitor	470P 50V J				01
C167	UA353820	Mylar Capacitor	8200P 50V J				
C168	UA353820	Mylar Capacitor	8200P 50V J				
C169	UR847220	Electrolytic Cap.	22.00 25.0V				
C170	UR847220	Electrolytic Cap.	22.00 25.0V				
C171	UR847100	Electrolytic Cap.	10.00 25.0V				01
-174	UR847100	Electrolytic Cap.	10.00 25.0V				01
C175	UN847100	Electrolytic Cap.-BP	10.00 25.0V				01
C176	UN847100	Electrolytic Cap.-BP	10.00 25.0V				01
C177	UR847100	Electrolytic Cap.	10.00 25.0V				01
-180	UR847100	Electrolytic Cap.	10.00 25.0V				01
C181	VD930900	Semiconductive Cera. Cap.	0.1000 25V M				01
-190	VD930900	Semiconductive Cera. Cap.	0.1000 25V M				01
C191	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z				01
-195	UB245100	Monolithic Ceramic Cap.	F 0.100 25V Z				01
C196	UB052100	Monolithic Ceramic Cap.	SL 100P 50V J				01
CN102	LB918080	Base Post Connector	XH- 8P TE				01
CN004	VB390400	Connector Base Post	PH- 8P TE				01
CN005	VB390500	Connector Base Post	PH- 9P TE				03
CN006	VB390700	Connector Base Post	PH-11P TE				01
CN007	VB390800	Connector Base Post	PH-12P TE				01
CN008	LB932040	Base Post Connector	VH- 4P TE				01
CN009	VB390600	Connector Base Post	PH-10P TE				01
CN101	VB389800	Connector Base Post	PH- 2P TE				01
D1	VT332900	Diode (chip)	1SS355 TE-17				01
EM001	FZ006970	LC Filter	LS MT Y223NB				02
-011	FZ006970	LC Filter	LS MT Y223NB				02
EM101	FZ006970	LC Filter	LS MT Y223NB				02
-103	FZ006970	LC Filter	LS MT Y223NB				02
EM104	FZ006920	LC Filter	LS MT B271KB				01
-106	FZ006920	LC Filter	LS MT B271KB				01
IC002	XQ962D00	IC	YSS228E-F		DSP3		20
IC003	XQ962D00	IC	YSS228E-F		DSP3		20
IC004	IG102500	IC	NE5532P		OP AMP		06
IC005	IG102500	IC	NE5532P		OP AMP		06

*: New Parts

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	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
*	IC008	**XU462A00**	IC	MSM514260C-60TS-K		DRAM 4M		
	IC008	**XT776A00**	IC	UPD424260G5-70-7JF		DRAM 4M		16
*	IC011	**XU462A00**	IC	MSM514260C-60TS-K		DRAM 4M		
	IC011	**XT776A00**	IC	UPD424260G5-70-7JF		DRAM 4M		16
	IC012	**XS544A00**	IC	W24257S-70LL		SRAM 256K		07
	IC013	**XQ375A00**	IC	HD6413002FP16		CPU		09
	IC014	**XS544A00**	IC	W24257S-70LL		SRAM 256K		07
	IC018	**XH603A00**	IC	TC74HC157AF-TP1		DATA SELECTOR		03
	IC019	**XR967A00**	IC	MB3790PF		ASSP		05
	IC021	**XQ042A00**	IC	SN74HC374ANSR		D-FF		03
	IC025	**VR903700**	Photo Coupler	HCPL-M600				04
	IC027	**XQ042A00**	IC	SN74HC374ANSR		D-FF		03
	IC028	**XN963A00**	IC	TC74VHC32F		OR		01
	IC029	**XN963A00**	IC	TC74VHC32F		OR		01
	IC033	**XD831A00**	IC	SN74HC08NSR		AND		01
*	IC034	**XU707A00**	IC	MBM29F400-BA-70		FLASH ROM 4M		
	IC035	**XD233A00**	IC	SN74HC244NSR		BUFFER		03
	IC036	**XD233A00**	IC	SN74HC244NSR		BUFFER		03
	IC101	**XD660A00**	IC	TC74HCU04AF-TP1		INVERTER		01
	IC102	**XR684A00**	IC	TC74HC4040F		B.COUNTER		03
	IC110	**XQ967A00**	IC	TC74HC164AF		SHIFT REGISTER		03
	IC117	**XD658A00**	IC	TC74HC175AF-TP1		D-FF		02
	IC118	**XQ199A00**	IC	AK5390-VP		A/D CONVERTER		22
	IC119	**XK280A00**	IC	YSF210-M		DIGITAL FILTER		10
	IC120	**XA507A00**	IC	AN78N05		REGULATOR +5V		02
	IC121	**XG780A00**	IC	AN79N05		REGULATOR +5V		02
	IC122	**XN136A00**	IC	PCM1702P		D/A CONVERTER		08
	IC123	**XN136A00**	IC	PCM1702P		D/A CONVERTER		08
	IC124	**IG102500**	IC	NE5532P		OP AMP		06
	IC125	**IG102500**	IC	NE5532P		OP AMP		06
	IC128	**XA507A00**	IC	AN78N05		REGULATOR +5V		02
	IC129	**XG780A00**	IC	AN79N05		REGULATOR +5V		02
	IC130	**XT384A00**	IC	PST600C-MMP3P		SYSTEM RESET		03
	JK1	**VK519000**	DIN Connector	5P3 YKF51-50B		MIDI IN/OUT		04
	L1-4	**VS740100**	Chip Inductance	BLM21B751S 2125				03
	R002	**RD255270**	Carbon Resistor (chip)	270.0 0.1 J				01
	R005	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
	R006	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
	R008	**RD255100**	Carbon Resistor (chip)	100.0 0.1 J				01
	R014	**RD255100**	Carbon Resistor (chip)	100.0 0.1 J				01
	R015	**RD255100**	Carbon Resistor (chip)	100.0 0.1 J				01
	R018	**RD255100**	Carbon Resistor (chip)	100.0 0.1 J				01
	R025	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
	R028	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
	R031	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
	R032	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
	R035	**RD256100**	Carbon Resistor (chip)	1.0K 0.1 J				01
	R036	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
	R037	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
	R038	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
	R040	**RD256220**	Carbon Resistor (chip)	2.2K 0.1 J				01
	R043	**RD255220**	Carbon Resistor (chip)	220.0 0.1 J				01
	R044	**RD255220**	Carbon Resistor (chip)	220.0 0.1 J				01
	R046	**RD255220**	Carbon Resistor (chip)	220.0 0.1 J				01
	R049	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
	R101	**RD259100**	Carbon Resistor (chip)	1.0M 0.1 J				01
	R102	**RD255680**	Carbon Resistor (chip)	680.0 0.1 J				01
	R105	**HF757100**	Carbon Resistor	10.0K 1/4 J				01
	R106	**HF757100**	Carbon Resistor	10.0K 1/4 J				01
	R107	**RD255220**	Carbon Resistor (chip)	220.0 0.1 J				01
	R108	**HF756330**	Carbon Resistor	3.3K 1/4 J				01
	-111	**HF756330**	Carbon Resistor	3.3K 1/4 J				01
	R112	**HF756560**	Carbon Resistor	5.6K 1/4 J				01
	-117	**HF756560**	Carbon Resistor	5.6K 1/4 J				01
	R118	**HF754470**	Carbon Resistor	47.0 1/4 J				01
	-121	**HF754470**	Carbon Resistor	47.0 1/4 J				01
	R122	**HF756100**	Carbon Resistor	1.0K 1/4 J				01
	R123	**HF754100**	Carbon Resistor	10.0 1/4 J				01
	R125	**RD254100**	Carbon Resistor (chip)	10.0 0.1 J				01
	-128	**RD254100**	Carbon Resistor (chip)	10.0 0.1 J				01

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	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
	R129	**HF755820**	Carbon Resistor	820.0 1/4 J				01
	R130	**HF755820**	Carbon Resistor	820.0 1/4 J				01
	R131	**HF756470**	Carbon Resistor	4.7K 1/4 J				01
	R132	**HF756470**	Carbon Resistor	4.7K 1/4 J				01
	R133	**HF756220**	Carbon Resistor	2.2K 1/4 J				01
	-138	**HF756220**	Carbon Resistor	2.2K 1/4 J				01
	R139	**HF756100**	Carbon Resistor	1.0K 1/4 J				01
	R140	**HF756100**	Carbon Resistor	1.0K 1/4 J				01
	R141	**HF758100**	Carbon Resistor	100.0K 1/4 J				01
	R142	**HF758100**	Carbon Resistor	100.0K 1/4 J				01
	R143	**HF756470**	Carbon Resistor	4.7K 1/4 J				01
	RA1	**RE047100**	Resistor Array	10KX4				01
	-16	**RE047100**	Resistor Array	10KX4				01
	TR1	**VV556400**	Transistor	2SC2412K Q,R,S				01
	TR2	**VV556400**	Transistor	2SC2412K Q,R,S				01
	X001	**VU682100**	Quartz Crystal Unit	30.00M HZ DOC-49S2				06
	X003	**VE463500**	Quartz Crystal Unit	AT-49/12.0000MHZ				03
	X101	**VN277000**	Quartz Crystal Unit	24.576M AF3817CQA				03
*		**VZ974000**	Circuit Board	MAIN		J (XU365B0)		
*		**VZ975900**	Circuit Board	MAIN		U (XU365B0)		
*		**VZ976300**	Circuit Board	MAIN		E,B (XU365B0)		
*		**VZ974200**	Circuit Board	VR		(XU365B0)		
*		**VZ974600**	Circuit Board	ANF		(XU365B0)		
*		**V2156100**	Circuit Board	ANF2		(XU365B0)		
*		**VZ974400**	Circuit Board	ANR		(XU365B0)		
		EP630230	Bind Head Tapping Screw-C	3.0X8 MFZN2BL				01
		VA078900	Jumper Wire	0.55				
		VE646600	Heat Sink	OSH-4725C-1				
⚠	C301	**FI383470**	Capacitor	4700P 400V U.C.S.V				01
	C302	**VL802400**	Polypropylene Capacitor	0.022U/630V				01
	C303	**VS819200**	Monolithic Ceramic Cap.	0.100 50V Z				01
	C304	**VD930900**	Semiconductive Cera. Cap.	0.1000 25V M				01
*	C305	**VZ878800**	Electrolytic Cap.	2200U 160V				
*	C306	**UR759100**	Electrolytic Cap.	1000 35.0V				
*	C307	**UR759100**	Electrolytic Cap.	1000 35.0V				
*	C308	**UR739330**	Electrolytic Cap.	3300 16.0V				
	C309	**FG644100**	Ceramic Capacitor-F	0.0100 50V Z				01
	C310	**FG644100**	Ceramic Capacitor-F	0.0100 50V Z				01
*	C311	**UR739330**	Electrolytic Cap.	3300 16.0V				
	C312	**FG644100**	Ceramic Capacitor-F	0.0100 50V Z				01
*	C313	**UR896100**	Electrolytic Cap.	1.0 100.0V				
	C314	**UR847100**	Electrolytic Cap.	10.00 25.0V				01
	C315	**UR847100**	Electrolytic Cap.	10.00 25.0V				01
	C316	**FG644100**	Ceramic Capacitor-F	0.0100 50V Z				01
	C317	**FG644100**	Ceramic Capacitor-F	0.0100 50V Z				01
	C318	**UN847100**	Electrolytic Cap.-BP	10.00 25.0V				01
*	C319	**UR867220**	Electrolytic Cap.	22.00 50.0V				
*	C320	**UR896100**	Electrolytic Cap.	1.0 100.0V				
*	C321	**UR866100**	Electrolytic Cap.	1.00 50.0V				
	C322	**UR847100**	Electrolytic Cap.	10.00 25.0V				01
*	C323	**UR896100**	Electrolytic Cap.	1.0 100.0V				
*	C324	**FH211470**	Ceramic Capacitor-SL	47P 500V K				
*	C325	**UJ897470**	Electrolytic Cap.	47.0 100.0V				
	C326	**UJ897100**	Electrolytic Cap.	10.0 100.0V				01
*	C327	**FH211470**	Ceramic Capacitor-SL	47P 500V K				
	C329	**FG644100**	Ceramic Capacitor-F	0.0100 50V Z				01
	C330	**UR847100**	Electrolytic Cap.	10.00 25.0V				01
	C331	**UR847100**	Electrolytic Cap.	10.00 25.0V				01
	C332	**FG644100**	Ceramic Capacitor-F	0.0100 50V Z				01
	C333	**UA354100**	Mylar Capacitor	0.0100 50V J				01
	C334	**UA355100**	Mylar Capacitor	0.1000 50V J				01
*	C335	**VZ878800**	Electrolytic Cap.	2200U 160V				
	C336	**VD930900**	Semiconductive Cera. Cap.	0.1000 25V M				01
	-338	**VD930900**	Semiconductive Cera. Cap.	0.1000 25V M				01
*	C401	**UR866100**	Electrolytic Cap.	1.00 50.0V				
	C402	**UR847100**	Electrolytic Cap.	10.00 25.0V				01
	-405	**UR847100**	Electrolytic Cap.	10.00 25.0V				01
*	C406	**UR866100**	Electrolytic Cap.	1.00 50.0V				
	C407	**UA355100**	Mylar Capacitor	0.1000 50V J				01

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REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
C408	UA355100	Mylar Capacitor	0.1000 50V J				01
C409	UR847100	Electrolytic Cap.	10.00 25.0V				01
C410	FG652100	Ceramic Capacitor-SL	100P 50V J				01
C411	UR847330	Electrolytic Cap.	33.00 25.0V				
C412	UR847100	Electrolytic Cap.	10.00 25.0V				01
C413	FG613100	Ceramic Capacitor-B	1000P 50V K				01
* C414	UR866100	Electrolytic Cap.	1.00 50.0V				
C415	FG652100	Ceramic Capacitor-SL	100P 50V J				01
C416	UR847100	Electrolytic Cap.	10.00 25.0V				01
-418	UR847100	Electrolytic Cap.	10.00 25.0V				01
C419	UR847220	Electrolytic Cap.	22.00 25.0V				
C420	UR847220	Electrolytic Cap.	22.00 25.0V				
C421	UR847100	Electrolytic Cap.	10.00 25.0V				01
C422	FG652100	Ceramic Capacitor-SL	100P 50V J				01
C423	UR847100	Electrolytic Cap.	10.00 25.0V				01
C424	UR847100	Electrolytic Cap.	10.00 25.0V				01
C425	FG652100	Ceramic Capacitor-SL	100P 50V J				01
C426	VD930900	Semiconductive Cera. Cap.	0.1000 25V M				01
-428	VD930900	Semiconductive Cera. Cap.	0.1000 25V M				01
* C501	UR866100	Electrolytic Cap.	1.00 50.0V				
C502	FG652100	Ceramic Capacitor-SL	100P 50V J				01
C503	UR847100	Electrolytic Cap.	10.00 25.0V				01
-506	UR847100	Electrolytic Cap.	10.00 25.0V				01
C507	UA355100	Mylar Capacitor	0.1000 50V J				01
C508	UA355100	Mylar Capacitor	0.1000 50V J				01
* C601	UR848220	Electrolytic Cap.	220.00 25.0V				
C602	FG644100	Ceramic Capacitor-F	0.0100 50V Z				01
C603	UR847100	Electrolytic Cap.	10.00 25.0V				01
C604	VD930900	Semiconductive Cera. Cap.	0.1000 25V M				01
C605	VD930900	Semiconductive Cera. Cap.	0.1000 25V M				01
C606	FG644100	Ceramic Capacitor-F	0.0100 50V Z				01
C607	VD930900	Semiconductive Cera. Cap.	0.1000 25V M				01
C608	FG644100	Ceramic Capacitor-F	0.0100 50V Z				01
C609	VD930900	Semiconductive Cera. Cap.	0.1000 25V M				01
C610	FG644100	Ceramic Capacitor-F	0.0100 50V Z				01
C611	VD930900	Semiconductive Cera. Cap.	0.1000 25V M				01
C612	VD930900	Semiconductive Cera. Cap.	0.1000 25V M				01
C613	FG644100	Ceramic Capacitor-F	0.0100 50V Z				01
C614	VD930900	Semiconductive Cera. Cap.	0.1000 25V M				01
C615	FG644100	Ceramic Capacitor-F	0.0100 50V Z				01
C616	VD930900	Semiconductive Cera. Cap.	0.1000 25V M				01
C617	FG644100	Ceramic Capacitor-F	0.0100 50V Z				01
C618	VD930900	Semiconductive Cera. Cap.	0.1000 25V M				01
C619	FG644100	Ceramic Capacitor-F	0.0100 50V Z				01
C701	VR168700	Monolithic Mylar Capacitor	ECQ-V1H224JL3				01
C702	FG652100	Ceramic Capacitor-SL	100P 50V J				01
C703	UR847100	Electrolytic Cap.	10.00 25.0V				01
C704	VR168700	Monolithic Mylar Capacitor	ECQ-V1H224JL3				01
C705	FG652100	Ceramic Capacitor-SL	100P 50V J				01
C706	UR847100	Electrolytic Cap.	10.00 25.0V				01
C707	UR847100	Electrolytic Cap.	10.00 25.0V				01
C708	UR847100	Electrolytic Cap.	10.00 25.0V				01
CN301	LB918030	Base Post Connector	XH- 3P TE				01
CN302	LB932050	Base Post Connector	VH- 5P TE				01
CN303	LB932040	Base Post Connector	VH- 4P TE				01
CN304	——	Shield Wire	2P L=250 B&C		(VZ97560)		
CN305	——	XH Connector Assembly	4P L=400 B&C		(VZ97470)		
CN306	——	XH Connector Assembly	5P L=450 B&C		(VZ97480)		
CN307	——	XH Connector Assembly	3P L=60 B&C		(VZ97430)		
CN308	——	VH Connector Assembly	4P L=250 B&C 105˚C		(VZ97390)		
CN309	——	Connector Assembly	3P L=200MM		(VR14290)		
CN310	——	Connector Assembly	3P L=200MM		(VR14290)		
CN312	——	Connector Assembly	3P L=200MM		(VR14290)		
CN314	——	Connector Assembly	3P L=200MM		(VR14290)		
CN315	——	Connector Assembly	3P L=200MM		(VR14290)		
CN317	——	Connector Assembly	3P L=200MM		(VR14290)		
CN318	VG879900	Base Post Connector	VA- 2P TE		U,C,B,E		01
CN401	——	Shield Wire	8P L=100 B&C		(VZ97580)		
CN402	LB918020	Base Post Connector	XH- 2P TE				01
CN403	VB389900	Connector Base Post	PH- 3P TE				01

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REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
CN404	LB918040	Base Post Connector	XH- 4P TE				01
CN501	— —	Shield Wire	3P L=250 B&C		(VZ97570)		
CN502	— —	Shield Wire	2P L=100 B&C		(VZ97550)		
CN503	LB918050	Base Post Connector	XH- 5P TE				01
CN504	VB390200	Connector Base Post	PH- 6P TE				01
CN601	LB918030	Base Post Connector	XH- 3P TE				01
CN602	— —	PH Connector Assembly	8P L=100 B&C		(VZ97490)		
CN603	— —	PH Connector Assembly	10P L=100 B&C		(VZ97510)		
CN604	— —	PH Connector Assembly	9P L=100 B&C		(VZ97500)		
CN701	— —	PH Connector Assembly	6P L=70 B&C		(V207050)		
D301	VB941200	Diode	1SS133,1SS176				01
-309	VB941200	Diode	1SS133,1SS176				01
D401	VB941200	Diode	1SS133,1SS176				01
D402	VB941200	Diode	1SS133,1SS176				01
D501	VB941200	Diode	1SS133,1SS176				01
-505	VB941200	Diode	1SS133,1SS176				01
D701	VB941200	Diode	1SS133,1SS176				01
-704	VB941200	Diode	1SS133,1SS176				01
⚠ DB301	IH001370	Diode Stack	D5FB20 5.0A 200V				05
⚠ DB302	IH001090	Diode	S4VB20 2.6A 200V				04
⚠ DB303	VS197600	Diode Stack	S1VB20 1.0A 200V				02
EM601	FZ006970	LC Filter	LS MT Y223NB				02
⚠ * F301	V0014600	Fuse	T 3.00A JUC		J,U		
⚠ F301	KB001660	Fuse	T 1.60AL/250V S		E,B		02
F301	LB201530	Fuse Holder	PC-PH1				01
⚠ * F302	VZ093400	Fuse	TL 0.5A J.U.C		J,U		
⚠ F302	KB000710	Fuse	T 500 AL/250V S		E,B		02
F302	LB201530	Fuse Holder	PC-PH1				01
⚠ * F303	VZ093400	Fuse	TL 0.5A J.U.C		J,U		
⚠ F303	KB000710	Fuse	T 500 AL/250V S		E,B		02
F303	LB201530	Fuse Holder	PC-PH1				01
⚠ * F304	V0014600	Fuse	T 3.00A JUC		J,U		
⚠ F304	KB000760	Fuse	T 3.15AL/250V S		E,B		02
F304	LB201530	Fuse Holder	PC-PH1				01
⚠ F305	KB000750	Fuse	T 2.00AL/250V		E,B		02
⚠ F305	VS822500	Fuse	T 2.00A JUC		J,U		02
F305	LB201530	Fuse Holder	PC-PH1				01
FT301	IE000010	FET	2SK30ATM Y				03
FT302	IE000010	FET	2SK30ATM Y				03
⚠ IC301	XD853A00	IC	NJM7815FA		REGULATOR		03
⚠ IC302	XD854A00	IC	NJM7915FA		REGULATOR		03
IC303	XJ607A00	IC	NJM7805FA		REGULATOR +5V		02
IC401	IG107000	IC	NJM072D		OPAMP		04
-403	IG107000	IC	NJM072D		OPAMP		04
IC501	IG107000	IC	NJM072D		OPAMP		04
IC601	XF494A00	IC	LB1641		MOTOR DRIVER		03
-608	XF494A00	IC	LB1641		MOTOR DRIVER		03
IC701	IG107000	IC	NJM072D		OPAMP		04
JK401	VS133700	XLM Connector	NC3MAH		LINE OUT		04
JK402	VL790300	Jack	HLJ3305-01-3000		SEND		03
JK403	VL830500	Jack	HLJ3305-01-3030		RETURN		03
JK501	LB301800	Phone Jack	HLJ0544		INPUT LOW		03
JK701	LB301800	Phone Jack	HLJ0544		INPUT HIGH		03
K301	VA855400	Terminal					01
K302	VA855400	Terminal					01
K303	VA855400	Terminal			J		01
K304	VA855400	Terminal			J		01
K401	VC719300	Terminal Plate	P-424				01
L401	VB971100	Coil	FL5R200QN 20uH				01
L402	VB971100	Coil	FL5R200QN 20uH				01
LD501	VR080200	LED	SLR-342VR3F RE		TRIM(Red)		01
LD502	VR080300	LED	SLR-342MG3F GR		TRIM(Green)		01
R301	HF756220	Carbon Resistor	2.2K 1/4 J				01
R302	HF757100	Carbon Resistor	10.0K 1/4 J				01
R303	HF757100	Carbon Resistor	10.0K 1/4 J				01
R304	HF755220	Carbon Resistor	220.0 1/4 J				01
R305	HF758100	Carbon Resistor	100.0K 1/4 J				01
R306	HF758120	Carbon Resistor	120.0K 1/4 J				01
R307	HF756220	Carbon Resistor	2.2K 1/4 J				01
R308	HF758100	Carbon Resistor	100.0K 1/4 J				01

*: New Parts

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REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
R309	HF755220	Carbon Resistor	220.0 1/4 J				01
R310	HF758100	Carbon Resistor	100.0K 1/4 J				01
R311	HF756390	Carbon Resistor	3.9K 1/4 J				01
R312	HF758100	Carbon Resistor	100.0K 1/4 J				01
-315	HF758100	Carbon Resistor	100.0K 1/4 J				01
R316	HF757220	Carbon Resistor	22.0K 1/4 J				01
R317	HF757100	Carbon Resistor	10.0K 1/4 J				01
R318	HF758150	Carbon Resistor	150.0K 1/4 J				01
R319	HF756100	Carbon Resistor	1.0K 1/4 J				01
R320	HF758100	Carbon Resistor	100.0K 1/4 J				01
R321	HF755100	Carbon Resistor	100.0 1/4 J				01
R322	HF757680	Carbon Resistor	68.0K 1/4 J				01
R323	HF758100	Carbon Resistor	100.0K 1/4 J				01
R324	HF759220	Carbon Resistor	2.2M 1/4 J				01
R325	HF756270	Carbon Resistor	2.7K 1/4 J				01
R326	HF758680	Carbon Resistor	680.0K 1/4 J				01
R327	VC761800	Metal Oxide Film Resistor	1.5K 2W J				01
R328	HF756330	Carbon Resistor	3.3K 1/4 J				01
R329	VC750000	Metal Oxide Film Resistor	10.0K 1W J				01
R330	VC749400	Metal Oxide Film Resistor	5.6K 1W J				01
R331	HV755220	Flame Proof C. Resistor	220.0 1/4 J				01
R332	VC753800	Metal Oxide Film Resistor	1.0 2W J				01
R333	HF755470	Carbon Resistor	470.0 1/4 J				01
R334	HF755470	Carbon Resistor	470.0 1/4 J				01
R335	HF755680	Carbon Resistor	680.0 1/4 J				01
R336	HF755680	Carbon Resistor	680.0 1/4 J				01
R337	HV755150	Flame Proof C. Resistor	150.0 1/4 J				01
R338	HV754100	Flame Proof C. Resistor	10.0 1/4 J				01
R339	HV755150	Flame Proof C. Resistor	150.0 1/4 J				01
R340	VC755500	Metal Oxide Film Resistor	4.7 2W J				01
R341	VC761800	Metal Oxide Film Resistor	1.5K 2W J				01
R401	HF758100	Carbon Resistor	100.0K 1/4 J				01
R402	HF755270	Carbon Resistor	270.0 1/4 J				01
R403	HF757120	Carbon Resistor	12.0K 1/4 J				01
R404	HF757100	Carbon Resistor	10.0K 1/4 J				01
R405	HF757100	Carbon Resistor	10.0K 1/4 J				01
R406	HF757470	Carbon Resistor	47.0K 1/4 J				01
R407	HF757470	Carbon Resistor	47.0K 1/4 J				01
R408	HF758470	Carbon Resistor	470.0K 1/4 J				01
R409	HF757470	Carbon Resistor	47.0K 1/4 J				01
R410	HF757100	Carbon Resistor	10.0K 1/4 J				01
R411	HF757100	Carbon Resistor	10.0K 1/4 J				01
R412	HF756100	Carbon Resistor	1.0K 1/4 J				01
R413	HF756100	Carbon Resistor	1.0K 1/4 J				01
R414	HF757220	Carbon Resistor	22.0K 1/4 J				01
R415	HF757470	Carbon Resistor	47.0K 1/4 J				01
R416	HF757470	Carbon Resistor	47.0K 1/4 J				01
R417	HF757100	Carbon Resistor	10.0K 1/4 J				01
R418	HF757470	Carbon Resistor	47.0K 1/4 J				01
R419	HF758470	Carbon Resistor	470.0K 1/4 J				01
R420	HF757100	Carbon Resistor	10.0K 1/4 J				01
-423	HF757100	Carbon Resistor	10.0K 1/4 J				01
R424	HF756220	Carbon Resistor	2.2K 1/4 J				01
R425	HF758100	Carbon Resistor	100.0K 1/4 J				01
-427	HF758100	Carbon Resistor	100.0K 1/4 J				01
R428	HF755330	Carbon Resistor	330.0 1/4 J				01
R429	HF755330	Carbon Resistor	330.0 1/4 J				01
R430	HF758220	Carbon Resistor	220.0K 1/4 J				01
R431	HF755270	Carbon Resistor	270.0 1/4 J				01
R432	HF755270	Carbon Resistor	270.0 1/4 J				01
R433	HF757220	Carbon Resistor	22.0K 1/4 J				01
R434	HF758220	Carbon Resistor	220.0K 1/4 J				01
R435	HF757100	Carbon Resistor	10.0K 1/4 J				01
R501	HF756100	Carbon Resistor	1.0K 1/4 J				01
R502	HF758100	Carbon Resistor	100.0K 1/4 J				01
R503	HF756470	Carbon Resistor	4.7K 1/4 J				01
R504	HF757390	Carbon Resistor	39.0K 1/4 J				01
R505	HF756680	Carbon Resistor	6.8K 1/4 J				01
R506	HF756100	Carbon Resistor	1.0K 1/4 J				01
R507	HF757100	Carbon Resistor	10.0K 1/4 J10K 63M J				01

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REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
R508	HF757150	Carbon Resistor	15.0K 1/4 J				01
R509	HF758100	Carbon Resistor	100.0K 1/4 J				01
R510	HF757330	Carbon Resistor	33.0K 1/4 J				01
R511	HF758100	Carbon Resistor	100.0K 1/4 J				01
R512	HF758100	Carbon Resistor	100.0K 1/4 J				01
R513	HF756330	Carbon Resistor	3.3K 1/4 J				01
R514	HF757330	Carbon Resistor	33.0K 1/4 J				01
R515	HF756150	Carbon Resistor	1.5K 1/4 J				01
R516	HF757330	Carbon Resistor	33.0K 1/4 J				01
R601	HF756470	Carbon Resistor	4.7K 1/4 J				01
R602	HF754100	Carbon Resistor	10.0 1/4 J				01
R603	HF756470	Carbon Resistor	4.7K 1/4 J				01
R604	HF754100	Carbon Resistor	10.0 1/4 J				01
R605	HF756470	Carbon Resistor	4.7K 1/4 J				01
R606	HF754100	Carbon Resistor	10.0 1/4 J				01
R607	HF756470	Carbon Resistor	4.7K 1/4 J				01
R608	HF754100	Carbon Resistor	10.0 1/4 J				01
R609	HF756470	Carbon Resistor	4.7K 1/4 J				01
R610	HF754100	Carbon Resistor	10.0 1/4 J				01
R611	HF756470	Carbon Resistor	4.7K 1/4 J				01
R612	HF754100	Carbon Resistor	10.0 1/4 J				01
R613	HF756470	Carbon Resistor	4.7K 1/4 J				01
R614	HF754100	Carbon Resistor	10.0 1/4 J				01
R615	HF756470	Carbon Resistor	4.7K 1/4 J				01
R616	HF754100	Carbon Resistor	10.0 1/4 J				01
R701	HF757100	Carbon Resistor	10.0K 1/4 J				01
R702	HF759100	Carbon Resistor	1.0M 1/4 J				01
R703	HF757270	Carbon Resistor	27.0K 1/4 J				01
R704	HF756470	Carbon Resistor	4.7K 1/4 J				01
R705	HF757100	Carbon Resistor	10.0K 1/4 J				01
R706	HF757100	Carbon Resistor	10.0K 1/4 J				01
R707	HF759100	Carbon Resistor	1.0M 1/4 J				01
R708	HF756470	Carbon Resistor	4.7K 1/4 J				01
R709	HF756470	Carbon Resistor	4.7K 1/4 J				01
R710	HF757100	Carbon Resistor	10.0K 1/4 J				01
RA301	VJ787600	Metal Plate Resistor	MPC725 0.22+0.22				02
-303	VJ787600	Metal Plate Resistor	MPC725 0.22+0.22				02
RY301	VL369700	Relay	DC RY5W-K				05
SPGH	——	Connector Assembly	SP		(VZ87890)		
TR301	IC174070	Transistor	2SC1740S R,S				01
-303	IC174070	Transistor	2SC1740S R,S				01
TR304	IA097030	Transistor	2SA970 GR,BL				01
-306	IA097030	Transistor	2SA970 GR,BL				01
TR307	IC270500	Transistor	2SC2705 O,Y				01
TR308	IC270500	Transistor	2SC2705 O,Y				01
TR309	IA114500	Transistor	2SA1145 O,Y				01
TR310	VQ116600	Pair Transistor	A1837/C4793				04
TR311	VQ116600	Pair Transistor	A1837/C4793				04
TR312	VA107000	Transistor	2SC3423 O,Y				02
TR313	VY705000	Transistor	2SC5200 R,O				05
TR314	VY705000	Transistor	2SC5200 R,O				05
TR501	IC174070	Transistor	2SC1740S R,S				01
TR502	IA111520	Transistor	2SA1115 E,F				01
TR503	IC174070	Transistor	2SC1740S R,S				01
VR301	VA787900	Trimmer Potentiometer	B 4.7K 3P RHE				01
VR302	VB244500	Trimmer Potentiometer	B 470.0K 3P KVS				01
VR303	VA787500	Trimmer Potentiometer	B 470 3P RHEOA				01
* VR401	VZ658600	Rotary Variable Resistor	16MM 50K A		LINE OUT LEVEL		
* VR402	VZ658700	Rotary Variable Resistor	16MM 20K B		BLEND		
* VR501	V2212700	Rotary Variable Resistor	RK1631210 50KB		OUTPUT		
VR502	VU647700	Rotary Variable Resistor	RK1631210 50KC		TRIM		04
VR601	VU647600	Motor Drive Volume	RK16812MG 10KB		GAIN		07
VR602	VU647600	Motor Drive Volume	RK16812MG 10KB		MASTER		07
VR603	VA788500	Trimmer Potentiometer	B 220.0K 3P RHE				01
VR604	VU647600	Motor Drive Volume	RK16812MG 10KB		TREBLE		07
VR605	VA788500	Trimmer Potentiometer	B 220.0K 3P RHE				01
VR606	VU647600	Motor Drive Volume	RK16812MG 10KB		HIGH MID		07
VR607	VA788500	Trimmer Potentiometer	B 220.0K 3P RHE				01
VR608	VU647600	Motor Drive Volume	RK16812MG 10KB		LOW MID		07
VR609	VA788500	Trimmer Potentiometer	B 220.0K 3P RHE				01

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	REF NO.	PART NO.	DESCRIPTION			REMARKS	QTY	RANK
	VR610	**VU647600**	Motor Drive Volume	RK16812MG 10KB		BASS		07
	VR611	**VA788500**	Trimmer Potentiometer	B 220.0K 3P RHE				01
	VR612	**VU647600**	Motor Drive Volume	RK16812MG 10KB		PRESENCE		07
	VR613	**VU647600**	Motor Drive Volume	RK16812MG 10KB		REVERB		07
	ZD301	**VQ554700**	Zener Diode	MTZJ9.1B 9.1V				01
	ZD401	**VQ313000**	Zener Diode	MTZJ5.6B 5.6V				01
	ZD402	**VQ313000**	Zener Diode	MTZJ5.6B 5.6V				01
	ZD501	**VP764200**	Zener Diode	MTZJ12A 12.0V				01
	ZD601	**VQ451000**	Zener Diode	MTZJ5.1B 5.1V				01
	-608	**VQ451000**	Zener Diode	MTZJ5.1B 5.1V				01
*		**VZ772300**	Circuit Board	PN		(XU332B0)		
	C201	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	-203	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C204	**UR847100**	Electrolytic Cap.	10.00 25.0V				01
	C205	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	C206	**UB245100**	Monolithic Ceramic Cap.	F 0.100 25V Z				01
	CN201	**VC166500**	Connector Base Post	PH-12P SE				01
	CN202	**VB389600**	Connector Base Post	PH-11P SE				01
	D201	**VT332900**	Diode (chip)	1SS355 TE-17				01
	-214	**VT332900**	Diode (chip)	1SS355 TE-17				01
	IC201	**VH630700**	LED Display	HDSP-5521				04
*	IC201	**VU647500**	IC Socket	100-024-000				
	IC202	**XQ042A00**	IC	SN74HC374ANSR		D-FF		03
	-205	**XQ042A00**	IC	SN74HC374ANSR		D-FF		03
	LD201	**VG261500**	LED	GL3PR8 RE		AMP,TAPE ECHO,...		01
	-206	**VG261500**	LED	GL3PR8 RE		...,STORE,PLATE		01
	LD201	**VA277900**	LED Spacer					01
	-206	**VA277900**	LED Spacer					01
	LD207	**VN327300**	LED	SLP-155B-81 RE		LEAD1 Program,...		01
	-214	**VN327300**	LED	SLP-155B-81 RE		...,CLEAN2 VOL PEDAL		01
*	LD207	**V2176100**	LED Spacer	BL				
*	-214	**V2176100**	LED Spacer	BL				
	R201	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
	R202	**RD255820**	Carbon Resistor (chip)	820.0 0.1 J				01
	-205	**RD255820**	Carbon Resistor (chip)	820.0 0.1 J				01
	R206	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
	R207	**RD255820**	Carbon Resistor (chip)	820.0 0.1 J				01
	R208	**RD255820**	Carbon Resistor (chip)	820.0 0.1 J				01
	R209	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
	R210	**RD255820**	Carbon Resistor (chip)	820.0 0.1 J				01
	-212	**RD255820**	Carbon Resistor (chip)	820.0 0.1 J				01
	R213	**RD257100**	Carbon Resistor (chip)	10.0K 0.1 J				01
	R214	**RD255820**	Carbon Resistor (chip)	820.0 0.1 J				01
	-220	**RD255820**	Carbon Resistor (chip)	820.0 0.1 J				01
	R221	**RD255560**	Carbon Resistor (chip)	560.0 0.1 J				01
	-234	**RD255560**	Carbon Resistor (chip)	560.0 0.1 J				01
	SW201	**KA907030**	Push Switch	SKHHAL		LEAD1,LEAD2,...		01
	-214	**KA907030**	Push Switch	SKHHAL		...,STORE,RECALL		01
*		**XU436A00**	Speaker	VINTAGE30				
		VR144600	Connector Assembly	L=500mm				06
		VR145100	Connector Assembly	L=200mm				03
*		**VZ992800**	Connector Assembly	SP FRAME		U		
		——	Power Switch Assembly			(V225770)		
⚠ *		**V2217000**	Switch	JW		POWER switch		
⚠		**MG000610**	AC Cord	J 2P 15A 2.1m		J		06
⚠ *		**VZ176600**	AC Cord Assembly	UC 3P SJT VAR		U		
⚠ *		**VZ971600**	AC Cord Assembly	E 3P 6A VAR		E		
⚠ *		**V2017600**	AC Cord Assembly	BS 3P 10A 2.5m		B		
⚠ *		**XU118A00**	Power Transformer			J		
⚠ *		**XU295A00**	Power Transformer			U		
⚠ *		**XU296A00**	Power Transformer			E,B		
		LB201120	Phone Jack	JL2B X-G7639		SPEAKER		03

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